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SYDNEY: SATURDAY, MARCH 22, 1924.

No. 12.

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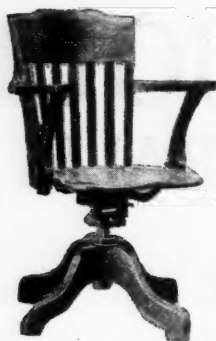
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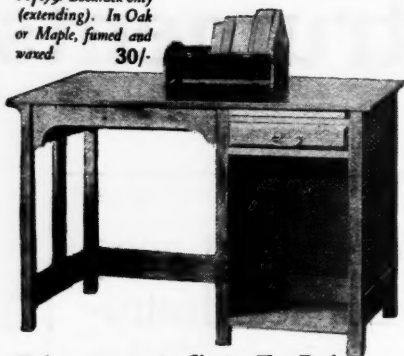


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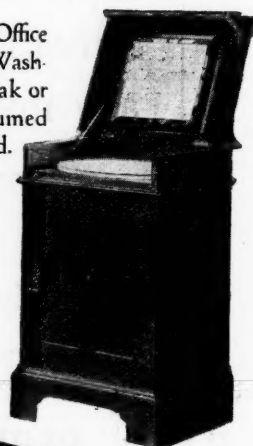
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An Address.¹

By GREGORY SPOTT, M.D., C.M., D.P.H. (Glasgow),
Retiring President of the Tasmanian Branch
of the British Medical Association.

My first duty is to thank you for the generous support you have given me during the year I have acted as your President.

While all have taken a keen interest in the workings of the Branch, we must graciously admit that any success we have achieved, is largely due to the indefatigable efforts of the Honorary Secretary, Dr. E. Brettingham-Moore. I am especially indebted to him and tender my sincere thanks for the great assistance he has at all times given me.

The year of 1923 is not likely to be forgotten in the medical history of Australasia, as it marks the period of the first Congress of the British Medical Association held in Melbourne under the Presidency of that distinguished leader, Mr. G. A. Syme.

With us it has not been without its sad events. The deaths of Dr. L. G. Thompson and Dr. Charles Parker, of Launceston, are a loss to the profession

and the public alike. They were two of our original members and were ever ready to uphold the best traditions of their calling.

A Government inquiry into the management of the Hobart Public Hospital and a subsequent attempt by our Council to re-establish the honorary system left the position unchanged.

My second duty is imposed by the time honoured custom, that the retiring President should read an address on some subject in which he is more or less interested. It has been very difficult to select a subject on which I could speak with any degree of authority, but as modern medicine demands that the medical practitioner of the future shall take a more active part in the medical activities of the State, I have thought it well to place before you some of the matters in which the profession and the public are mutually interested.

Mutual Interests.

The medical profession and the public are mutually interested in all matters pertaining to the welfare of the community. Each has an important part to play. The doctor should, as a good citizen, recognize his responsibility for the direction of any communal undertaking which has for its objective the physical betterment of mankind. No association of men has been more energetic in its advocacy of better water supplies, more efficient drainage, the

¹ Read at the Annual Meeting of the Tasmanian Branch of the British Medical Association on February 20, 1924.

need of isolation hospitals and a higher standard of education and training for nurses and midwives *et cetera* than the medical profession. With pride we can truthfully claim that the initiative in all measures aiming at the establishment of the ideal system of medicine, *id est* to prevent disease and to provide when necessary for its treatment in its various stages, stands to the credit of the profession of medicine.

While on the one hand the profession takes the initiative and advises on the scientific side, on the other hand the lay public must be mainly responsible for the sinews of war and must also offer every facility to the doctor for obtaining that knowledge and experience which will enable him to render efficient service to the community.

The public hospitals as well as bacteriological and pathological laboratories should be available to interested workers. The general practitioner in medicine is expected to be an expert in diagnosis, but unless facilities such as the above are granted him errors will be made and, before discovered, the opportunity of effecting a cure may be irretrievably lost.

The realization of this important axiom prompted the Branch to make every effort during the past year to induce the Government and the Board of Management to open the public hospitals to the medical profession.

As you know all our efforts were in vain. It would be ingratitude on my part were I not say that the Honourable J. C. McPhee, while Chief Secretary, was very anxious and indeed made every effort to re-establish the honorary system, but the Hospital Board not only flouted his wishes, but also ignored the recommendations of the Commission which they were instrumental in having appointed.

The Tasmanian public hospitals as "one man institutions" stand condemned from every point of view and if backed for political purposes there are many probabilities of real danger, if not disaster, ahead.

In these days when diagnosis and treatment depend not on individual, but rather on collective effort of many experts, it becomes more and more necessary to have the hospitals staffed with team workers supplied by well-equipped laboratories.

It is not possible for the ablest of men to master the whole volume of medical knowledge, hence specialists are required to help in the diagnosis and to treat effectively diseases of special organs. It is obvious then that only the wealthy can afford to pay for these services, the poor must go into the hospitals where they ought to be able to obtain such expert advice and treatment. In denying the profession the right of practice in the hospitals, the Board of Management and those supporting them are depriving the poor of the advantage of modern medicine both as regards diagnosis and treatment. It is to be greatly feared the time will come when they will have reason to regret their action.

Maternity Welfare.

It is impossible to dissociate maternity and infant welfare work. Very few of our own profession realize how many women lose their lives through

motherhood and how many still are unattended by physicians and this in spite of the maternity bonus. It has been said and it is probably true that a varying number between 30% to 60% pass through the "valley of the shadow of death with no ray of the light of science to dispel its gloom and with only the flickering candle of a midwife to guide them through their travail." It is deplorable that the function of motherhood should be attended with such avoidable risks. In England nearly four thousand women lose their lives annually in confinement and a no lesser number than between six hundred and seven hundred died in the Commonwealth in 1921. In addition to those that die there is a still greater number who are broken in health, become sterile or ultimately die from the unskilled interference or the want of proper attention at the time of confinement.

If the objective is and I think it should be, "that every woman in childbirth shall receive proper and adequate attention—ante-natal, natal and post-natal," then we must advocate some organized scheme which will provide not only skilled obstetricians, but a more highly educated and better trained staff of midwives who can and will do justice to the great responsibilities devolving upon them. It cannot be gainsaid that this field of medicine is practically unoccupied and that there are great opportunities for additional workers in the profession. Maternity welfare should not be wholly left to lay organization, but the profession with its scientific knowledge should guide and advise, while the laity administers. Indeed any such scheme to be successful must be a combination of science and good administration.

Infant Welfare.

In dealing with a rapidly developing subject such as infant welfare, it is not possible to formulate a scheme which will meet the needs and satisfy all at the very onset. Any organization of this nature must be built up gradually and experience will point out the most effective way of handling or improving it.

For many years the infant mortality has been gradually decreasing. Twenty-five years ago in England and Wales it was one hundred and fifty-four per thousand. Now it is about 89‰. In Australia it is 68‰ and in New Zealand 54‰. Of the babies that die, 50% do so before they reach the end of their third month and 35% of these do not live more than one week. These figures do not include still births or miscarriages. It is quite obvious, therefore, that if either maternal or infant mortality is to be reduced, greater attention must be given to the mother during the ante-natal and post-natal periods. The saving of child life really begins in greater and better attention to the mother or as Sir George Newman says: "If we would solve the problem of infant mortality, it would appear we must first obtain a higher standard in physical motherhood."

This all goes to show the necessity of ante-natal, post-natal and baby clinics. These clinics should be under the care and control of medical men. If the best results are to be obtained there must be

coordination between the medical practitioner and the welfare centres. In very many cases the clinic nurse can be of the greatest assistance. If the practitioner knows that the nurse is working with the desire to help him with, rather than deprive him of, his patient, he will welcome her assistance and be relieved to know that his orders are being carried out and his responsibility lessened; while the position of the nurse is the more secure knowing that she has the sympathy and backing of the doctor.

All medical treatment should be carried out by the practising members of the profession, when possible, failing that by general, maternity or children's hospitals. The clinics, if managed in this way, would confer lasting benefits on the community and greatly increase rather than decrease the work of the medical men. I submit the subject of maternity and infant clinics for greater consideration by the Branch.

Tuberculosis.

There is no disease so widespread and few more deadly than tuberculosis. It has received more consideration of late years than any other disease and yet it claims at least 7% of all deaths. It can be said and that truly, that science has shown what is necessary for its eradication, but it is equally true that the administrative or social aspect of the trouble has been exceedingly faulty. The eradication of tuberculosis is not a national but an international problem and worthy of the greatest intellects. Properly tackled it is not by any means insurmountable.

To the ordinary mind there are but two ways of banishing tuberculosis: Firstly by preventing the spread of the germs and secondly by building up the physical condition of the people so as to increase their power of resisting the invasion of these germs. In order, therefore, to prevent the spread of the germs we must have segregation of the infected. How segregation is to be achieved, whether in a sanatorium, domiciliary or industrial colony, is a very debatable point.

The isolation of infective patients in a sanatorium for a few months has its educational advantages and must of necessity control the "output," but unfortunately the earlier optimistic beliefs in its efficiency for cure can no longer be maintained. It would not be practicable to isolate every patient in sanatoria at present, but a preliminary three months' residence with proper instructions how to look after his own health and avoid being a danger to others would make further treatment of a domiciliary kind very much safer and more effectual. Whether sanatorium or domiciliary treatment be adopted, the patient is probably prevented from carrying on his daily avocation, but, if not, he probably works under the worst possible conditions in close, ill-ventilated rooms or factories, situated in over-crowded parts of the city. In such cases the industrial colony would fulfil a need. The patient could have medical treatment and at the same time earn his living and so be able to support his family and yet not be a menace to anyone.

It appears to me that if the sanatorium is to have a permanent niche in the prevention of consumption, it must be a place where patients in addition to receiving treatment can be trained to earn their own living amidst thoroughly healthy surroundings. We must ever remember that a sanatorium restricted merely to the treatment of tuberculosis does not help in its eradication.

It is lamentable to think that while millions of pounds have been spent in trying to cure consumption, little has been done to prevent it. Our efforts have been directed to the relief of the individual while the welfare of the general community has been neglected.

The early recognition of consumption is a most important factor, yet no attempt is made by means of complete, efficient and oft-repeated examinations of all school children to unearth the early sufferer. The same applies to industrial corporations, factories *et cetera*. Further, neither encouragement nor facilities are given to the early consumptive to isolate himself in the interests of the public and to the detriment of his own family. For the breadwinner to give himself up in the early stages very often means starvation for his family, unless adequate compensation be paid him.

Segregation is in the interest of the community and the public should see that the sufferer and his family are fairly treated. It might be said that it is impossible to pay compensation to all, but unless this is done, patients in the early and infective stages will still continue to spread the disease. It is little use tinkering with a big subject like this. It must be tackled in a scientific way and to do that means a big expenditure. Science has shown the way here and it is for the politician and the economist to do the rest. No price would be too high for the eradication of this plague. We are fighting the disease while the conditions responsible for its spread are allowed to exist.

Instead of paying £5,000 or £6,000 *per annum* in Tasmania for sanatorium treatment, we should be teaching the individual the laws of health, abolishing slums, giving citizens decent houses to live in, insisting upon all factories, workrooms and offices being well ventilated, lighted and not overcrowded. Our State and public schools should no longer be overcrowded and numerous open spaces and playgrounds for the children should be provided. Greater efforts ought to be made to give the people a plentiful and pure supply of food. Privation and poverty are potent factors in the production of tuberculosis. An annual examination of all citizens to discover and correct any tuberculous tendency is worthy of serious consideration. Indeed modern preventive medicine will demand that all members of the community be overhauled at least once a year, not only for the detection of tuberculosis, but also general defects or disease. Our dairy herds should be tested and proved free of tuberculous taint before a licence be granted to vend milk.

Venereal Disease.

The subject of venereal disease involves not only public health but social and moral conditions. It

is not an individual nor a national, but an international question. The ravages caused by syphilis and gonorrhœa are indescribable and the economic loss brought about by them is enormous. It is appalling to think that fifty thousand pounds *per annum* of public money is spent in the Commonwealth of Australia in the treatment of these diseases, apart from the amount paid privately by the affected individuals. I believe that in Great Britain the venereal disease clinics are costing the country nearly one million pounds *per annum*. In Hobart and Launceston (1922) there were three hundred and forty-four patients treated at a cost of £2,138, over £6 per patient of community money.

It is generally admitted that these diseases are the result of ignorance and bad social conditions. Surely then our course is clear in dealing with them—educate the public and improve environment. The teaching of sexual hygiene is imperative. It may begin in the home, but it must be taught in the school. It must not be left to the ordinary teacher, but given to the most experienced, efficient and tactful hygienist available: male teachers for males and female teachers for women and girls. Two thousand pounds spent in education and prevention would be worth ten thousand pounds spent in treatment.

To improve our social conditions we must have citizens housed in decent surroundings. So long as rents are high we will have overcrowding with its accompanying evils—immorality and disease. Healthy outdoor sports and exercise, restriction in the liquor traffic with good moral upbringing will be contributing factors to a chaste life.

Until an ideal state of affairs is brought about, it will be necessary, however, to treat the existing conditions and so venereal disease clinics must have their place. To obtain the desired results, these clinics should be staffed by expert officers vested with such powers as the Act and regulations of the Director of Public Health gives them.

Industrial Disease.

Prior to the Imperial authorities undertaking industrial activities the health and welfare of the factory hand and the hygienic condition of the factory received but scant attention. Today a new organization of industrial experts has been created and there are few central authorities who have not retained the services of an industrial manager, while many large industries have on their staff of officers a physician well skilled in occupational diseases. The relation of such a department to the general practitioner is ill-defined at present, but in the interest of the public and health a close co-ordination and cooperation must be established. It is the general practitioner who first sees the patient and observes the early symptoms so often invaluable in determining the nature of the disease. While he has been primarily called to treat the disease, to do this satisfactorily he must have full knowledge of the occupation and of the conditions under which his patient carries out his work. The industrial medical expert, having a full knowledge of the occupation and the conditions under which it is carried on together with the early symptoms sup-

plied by the medical practitioner, is in a position to deal effectively with the case from an industrial aspect. Only in this way can a satisfactory occupational record be kept. It becomes then the duty of the general practitioner to have or acquire knowledge of industrial disease and it is the duty of the industry or the Government to see that he is rewarded for his services. Industries exist to promote the health and safety of the citizens and their success or otherwise depends upon the health of the workers. Production depends upon the fitness and fitness is influenced by the living and industrial conditions of the worker.

School Life.

Tasmania was the first State of the Commonwealth to initiate a system of medical inspection of school children. Dr. J. S. C. Elkington, then Chief Health Officer, limited the work to the schools in the two principal cities, but with the appointment of two full-time medical inspectors all the schools of the State came under purview. In 1922 there were in the Hobart district 6,836 school children. The Medical Inspector received a salary of £75 or under three pence per head, while Launceston with 4,774 children paid its Medical Officer £75 or a little over threepence per head. In the remaining State schools there were 28,922 children and the two medical officers received £775 in salaries or about sixpence for each child.

The total number of children examined in 1922 were: Hobart, 2,063 children with 491 disabilities or 21%; Launceston, 1,120 children with 464 disabilities or 41%; southern district schools, 3,934 children with 570 disabilities or 14%; northern district schools, 6,374 children with 3,220 disabilities or 50%.

The principal defects are similar to those found elsewhere, namely defects of hearing and eyesight, malnutrition, diseases of nose and throat and dental caries. Diseases of the heart and lungs are perhaps not so common.

It has been a matter of comment for years that medical inspection is far from satisfactory. The medical examination of school children is thoroughly sound, but it must be more than an inspection. It must be a complete and thorough examination for the early detection of defects or incipient diseases. It has further failed because there has been in this State no machinery available to rectify any defects found except in the case of the dental clinics. Alas this has been abandoned by the Government for economic reasons. Do not misunderstand me. I am a thorough believer in the medical examination of all children, but the examination must be standardized, methodical and complete and the results should be submitted to a medical authority to decide what further action, if any, should be taken. If the Government cannot afford such examination, the Education Department should insist upon the production of a medical certificate of freedom from disease and of physical fitness before the child enters school. Many defects would thus be discovered and attended to, defects that escape the notice of the parents. The Department would thus be responsible for all preventive measures and the

individual for the detection and cure of defects and diseases.

The public have a right to demand that ordinary hygienic principles shall be observed in our State schools. Even in the twentieth century we frequently find schools in unhealthy areas with insufficient playgrounds. Class rooms are often small and at times overcrowded, while the common drinking cup and towel are still in constant use.

Mental Deficiencies.

The Tasmanian *Act* dealing with mental deficiency is thoroughly up to date and the pioneer work done by the Board and Director of the State Psychological Clinic (Dr. Morris-Miller) is worthy of the highest commendation. Developed on present lines the efforts now being made to educate, train and control existing defectives and to prevent further increase in the numbers of feeble-minded will, I am sure, give satisfactory results.

Recently a detailed examination has been made in the schools with the result that 0.5% of the children have been found defective. When we realize that at the very least 25% of the inmates of gaols, reformatories and lock hospitals *et cetera* are mentally deficient, we become seized with the importance of the need of special care and treatment of these unfortunates for individual and communal reasons. The State should see that the race is kept physically and mentally strong.

The reproduction of the unfit only creates further burdens and has a demoralizing and degenerating effect on the whole race. This subject as yet is in its infancy, but opens up a big field in which science and organization working together could achieve big results.

Infective Diseases.

The public, lay and medical, are alive to the importance of dealing with acute infective diseases. In this State where hospital accommodation is provided and free treatment given to the individual patient the public are deeply interested, but while the public are willing to spend large sums of money in dealing with infective diseases, it is the duty of the profession to point out the scientific principles which should guide the lay authority in adopting measures to combat these diseases. Sir Ronald Ross's scientific methods have enabled many of the malarial districts to be cleared of malarial disease. Indeed the construction of the Panama Canal was made practicable by the introduction of the same anti-mosquito campaign.

The Great War produced confirmation of the value of immunization against typhoid fever and more recent experience shows that diphtheria may be prevented in the same way and yet the public are still prepared to build hospitals for the reception of these diseases at an enormous cost of life and money without making the slightest attempt at preventive measures.

I do not say the hospital has not a real value in providing efficient care and treatment to those who otherwise could not be satisfactorily looked after at home, but here again we deal with the individual and overlook the communal welfare. We cannot force the public to accept our advice, but if we are persistent in our advice—and it is sound—

then we will create in the minds of citizens a new state for reform that neither ministers nor politicians can withstand. This *renaissance* will be effective when individuals realize their responsibilities, that is when the individual has lost his life in the fuller or more abundant life of the community. Until then we may expect the authorities: To neglect drainage and treat typhoid fever; to build sanatoria and retain slums and feed children on milk probably tainted with tuberculosis; to build and maintain diphtheria wards and allow school children to drink out of a common tap or cup; to provide venereal disease clinics and refuse to teach personal or sex hygiene; to pay compensation in industrial diseases and have no regular inspections; to extend sympathy to miners and allow them to work in ill-ventilated mines.

We are truly a people of contradictions.

Well might Professor Wynne say: "We have turned away from the ideals of the *Public Health Act*, from the improvement of environment which produced such incontestably good results, long before work in this direction was completed, when in fact it was little more than begun and that we are depleting the fund required for this work by a costly and partial treatment of the end results of the process inaugurated by faulty environment."

The Remedy.

What is the remedy for all this faulty and expensive effort we are making? Education! Education of the public and the profession. With education will come social action. The education of the people should begin in the schools and the history of how the Panama was cleared of malaria and yellow fever or how Jenner discovered vaccination would be much more profitable reading than the reasons why Napoleon failed to conquer the world.

It is possible to instruct the public in two ways, either by written word or living voice; the latter is the more profitable way in breaking strongholds of superstition. I have vivid recollections of how our present drainage scheme was advanced by speakers at various centres of the city. The Branch could do something in this way and we must not forget it is our duty to assume the leadership in public thought as regards the promotion of health.

The success or failure of any scheme of health promotion from a scientific point of view should be to the credit or otherwise of the faculty, while the laymen must be held responsible for its social aspect. It is imperative, therefore, that there should be complete cooperation and coordination of the profession and the public in all matters of mutual interest. The profession and members of the auxiliary services—health officials, nurses, midwives *et cetera* require greater facilities for making themselves efficient. The medical practitioner and the student must realize that they have a duty to the public as well as to the individual. They should have knowledge of preventive medicine and be enthusiastic in applying its principles.

It is not sufficient for the general practitioner to diagnose and notify diphtheria or typhoid fever. He should inquire into the cause, see that no others in the house are infected and apply preventive

measures and see generally that the public welfare is conserved. He will in this way become a unit of the Health Department bound by certain obligations and rewarded with adequate compensation. He will indeed be the most important factor in the practice of preventive medicine.

To enable him to carry out these duties, it will be necessary to offer him facilities at the clinical hospital, bacteriological and pathological laboratories, provide him with X-ray equipment and the means for carrying on research work, if he so desires. It is the duty of the authorities to see that these facilities are at his disposal.

It will take time to develop a scheme that will meet the requirements of modern medicine and with national assurance already under consideration it behoves the Association to see that any legislation on this subject will conserve the interest of the public and the traditions of the profession. An accepted Federal policy dealing with such matters as I have mentioned—maternity, infant and industrial welfare, school inspections, tuberculous and venereal disease clinics would be welcomed by medical practitioners and health administrators alike and be beneficial to the interests of the public.

There is no grander work known than the promotion of health, the prevention and treatment of disease. "To make the unfit fit is a noble task, but to make the fit fitter is a larger and higher achievement." I give you this as a slogan for the medicine of the future.

INTRA-PLEURAL PRESSURES IN ARTIFICIAL PNEUMOTHORAX THERAPY.

By J. GORDON HISLOP, M.B., Ch.B. (Melb.),
M.R.C.P. (London),

Medical Clinical Assistant to Out-Patients,
Melbourne Hospital.

PLEURAL adhesions are the rock on which the immediate success of pneumothorax is most commonly wrecked, for without a sufficiency of free pleural space an efficient pneumothorax cannot be produced. The ultimate result will depend largely on the number and strength of the adhesions present. In a large number of cases the adhesions yield to the pressure of the gas, but there is that relationship between adhesions and pressures which must be estimated in order that the pressures may be so adjusted as to provide the degree of collapse necessary without danger to the patient. At the outset it may be as well to state that the pressures in the cases quoted have been measured in centimetres of water and that air has been the gas introduced in all instances.

After the induction and first filling have been performed, clean fluctuations should be obtained at each insertion of the needle. At induction, however, this is not so. It was at one time thought that gas should not be introduced until this type of fluctuation occurred, as otherwise there was no guarantee that the needle was in the pleural cavity. Parry Morgan is of the opinion that clean fluctuations on a single manometer cannot occur in

induction until a rupture has been made in the visceral pleura and air has been allowed to escape from the lung. This, he states, occurs more frequently in induction than is realized.⁽¹⁾ This may be so and from time to time such cases have been reported and a few have come under the writer's notice. One case is instanced in which the patient complained of sudden pain and dyspnoea on the cannula passing the pleura. As no air had been admitted it was thought to be a case of pleural shock, but X-ray examination revealed an almost complete pneumothorax. Parry Morgan states that, provided the visceral pleura is not ruptured, the fluoroscope will not reveal a pneumothorax when only three hundred cubic centimetres of gas have been introduced into the pleural cavity. This would seem to be an established fact and may be noted in those patients who have been treated by what the Americans designate "selective collapse." It is not necessary, though, to wait for these fluctuations as in so many instances as soon as the resistance of the parietal pleura has been overcome, a negative reading is established and maintained. If the pressure in the pressure bottle be kept below the level of the atmospheric pressure, the apparatus may be opened when this negative pressure is maintained, since air will only leave the bottle when the needle is in the pleural cavity and its negative pressure "sucks" the air in. By this means there can be no danger of air entering a blood vessel and, if the air is not drawn in, it is obvious that the pleural space has not been reached; the apparatus should be closed again and a further attempt made. This maintained negative pressure is due possibly to the visceral pleura occluding the blunt cannula.

The Pressure in a Loculus.

When the needle enters a small loculus, the manometer fluctuations are likely to be slight in extent and the pressures only slightly negative. If, however, the loculus is a little larger the manometer fluctuations may be wide and the pressures definitely negative. This latter finding is due no doubt to the normal negative attraction between the lung root and the periphery localizing its action on the only part of the pleura free to respond. Coupled with this is the fact that in a loculus the major part of the movement resulting from this attraction occurs in the centre of the free area. If this be limited the range of movement is small; if it be large enough the movement is probably accentuated; if larger still this accentuation is lost.

When gas is introduced into a small loculus, the pressures speedily rise and at the first refilling entry is usually easy owing to the limited amount of absorption that has taken place on the small area of pleura concerned. But, if only a very small amount of gas has been introduced, sufficient absorption may have occurred to render it impossible to enter with a second needle.

The following figures afford a good example of a small loculus. September 2, 1922: — 5 to 0 centimetres water, fifty cubic centimetres of air, and pressures — 1 + 2 centimetres of water. This "pocket" could not be found on the following day and a further attempt at induction was unsuccessful.

An instance in which the negative attraction was accentuated is shown by these readings: July 23, 1923, — 24 — 17 centimetres of water, three hundred cubic centimetres of air, end pressures — 15 and + 12 centimetres of water. An attempt should always be made to extend a loculus, but it is rare to produce a successful collapse by this means. Seldom or ever is it possible to extend a loculus into which less than two hundred cubic centimetres can be introduced with safety at induction. The registration of atmospheric pressure after admission of fifty to one hundred cubic centimetres will never encourage the procedure, but in cases in which two hundred to three hundred cubic centimetres can be introduced before this pressure is reached, it may be deemed satisfactory to continue. If it is thought advisable to attempt the enlarging of a loculus quite high pressures may be used. Rivière⁽³⁾ advises limiting the maintained end pressure to fifteen centimetres of water, but gives instances in which he has used much higher pressures and the writer has seen a pressure of thirty centimetres of water used in an attempt to prevent re-expansion of the lung without success. Such pressures are dangerous and must be constantly watched.

The Pressures in the Early Stages.

Induction.

The pressures at the end of induction will only give evidence of a loculus having been entered or of the presence of adhesions in considerable numbers. If the adhesions are few in number, no indication is received as to the ultimate collapse that will be produced. Previously very large amounts up to the one thousand cubic centimetres had been introduced at induction and the end pressures then obtained gave some idea of the number and extent of the adhesions. Most authorities are now agreed that smaller initial doses are desirable. Burrell seldom introduces more than three hundred cubic centimetres, though he admits that he saw no ill-effects from the larger doses that he previously gave. He favours the small amounts and has found no added benefits from the larger which he thinks caused more pain.⁽⁴⁾ As will be seen the smaller doses were given in all the cases under review. When the treatment is being used to control hæmorrhage, larger quantities can safely be given. Any ill-effects which follow the admission of gas, depend far more on the pressures attained than on the amounts administered. Here again, however, the tendency is to reduce the initial quantity, four hundred cubic centimetres being now considered efficient to control hæmoptysis in the majority of instances. The writer saw a colleague introduce sixteen hundred cubic centimetres in one of his patients when the hæmorrhage recurred in large quantities; the pressure remained negative, no ill-effects were noted and the patient did well under continuance of treatment.

Refillings.

By the time the third or fourth filling has been completed more evidence of the degree of collapse to be achieved ultimately will have been gained. The quantities of air administered should be con-

trolled with the object of reaching a mean atmospheric reading at the fourth filling. If this can be managed by putting in each time reasonable additions of between four hundred and six hundred cubic centimetres and by making the fourth filling on the eighth to the tenth day after induction, the outlook is hopeful. In the presence of extensive adhesions atmospheric pressure may be registered at the first or second filling with varying quantities of gas. In two instances atmospheric pressure was registered at the fourth filling, though both these were afterwards complicated by adhesions to a greater or less extent.

Compression Pressures.

Once the lung has been allowed to collapse compression is resorted to, if the degree of collapse is considered insufficient. The extent, nature and situation of the adhesions will play important parts in the pressures necessary to maintain or produce the degrees of collapse considered efficient. Higher pressures are usually needed to stretch axillary adhesions as compared with apical ones of the same extent. Axillary adhesions also tend to make the lung re-expand, whilst when they are purely apical and diaphragmatic the collapse attained with the same pressure is much greater, for the lung is then drawn out in a linear manner along the mediastinum. The irregular areas of collapse so frequently seen are the result of the presence of axillary bands.

The persistence of symptoms calls for an attempt to increase the degree of collapse, but any increase of pressure must be brought about gradually. Sudden increase of intra-pleural tension in the presence of unyielding adhesions may result in the rupture of the visceral pleura. If it be thought that a gradual increase of tension will cause an adhesion to stretch and that the pressures may again be lowered later on, the temporary discomfort may justify the procedure—the end may justify the means. If the end be not attained in a reasonable space of time, the means are no longer justified and the pressures should be lowered to within the limits of safety or until the discomfort is no longer manifest. Evidence of stretching will be obtained from time to time, but seldom will such proof be received as is given by the figures in the accompanying table extracted from the history of a patient, C.M.

TABLE I.

Date.	Pressure in Centimetres of Water.	Cubic Centimetres of Air.	End Pressures in Centimetres of Water.
June 3, 1922	.. —3 to 0	500	+2 to +5 ¹
June 8, 1922	.. —1 to 0	500	+3 to +5
June 14, 1922	.. —2 to —1	500	+3 to +5
June 21, 1922	.. —2 to +1	550	+3 to +5
June 29, 1922	.. —5 to —2	700	+1 to +3 ²

¹ Eighth filling.² Adhesion stretched.

Pain in the shoulder was experienced from June 21 to 23, 1922, and after this date the temperature

settled, whereas an evening rise to 37.4° C. (99.4° F.) had occurred during the previous days. The amount of stretching could be seen on X-ray examination.

This indicates the findings after an adhesion has yielded; the initial pressures are more highly negative and the fluctuation greater and a larger amount of gas will not produce the previous end pressures. When the interval between the fillings has been lengthened unduly, a larger amount of gas may be required to attain the usual pressure; this should not be mistaken for the yielding of an adhesion.

Pain in the shoulder or in the neighbourhood of an extensive adhesion may be complained of after a refilling. As a general rule this does not last twenty-four hours and is not so much a pain as an uncomfortable feeling which local applications do not relieve.

When an adhesion has given way or more probably whilst it is giving, the pain may be of a

TABLE II.

Date.	Pressure in Centimetres of Water.	Cubic Centimetres of Air.	End Pressures in Centimetres of Water.
June 30, 1922 ..	- 5 to -2	600	-1 to +2
July 11, 1922 ..	- 8 to -3	600	-2 to +1
July 21, 1922, ..	- 7 to -3	600	-2 to +1
August 1, 1922 ..	- 9 to -6	650	-2 to 0
August 11, 1922 ..	- 7 to -3	650	-1 to +2
August 22, 1922 ..	-10 to -5	700	0 to +2

The Optimum Pressure.

Many points have to be considered before coming to a conclusion in favour of any given pressure or degree of collapse. The same pressure with the same collapse will produce totally different effects in supposedly similar cases. Thus a survey of the

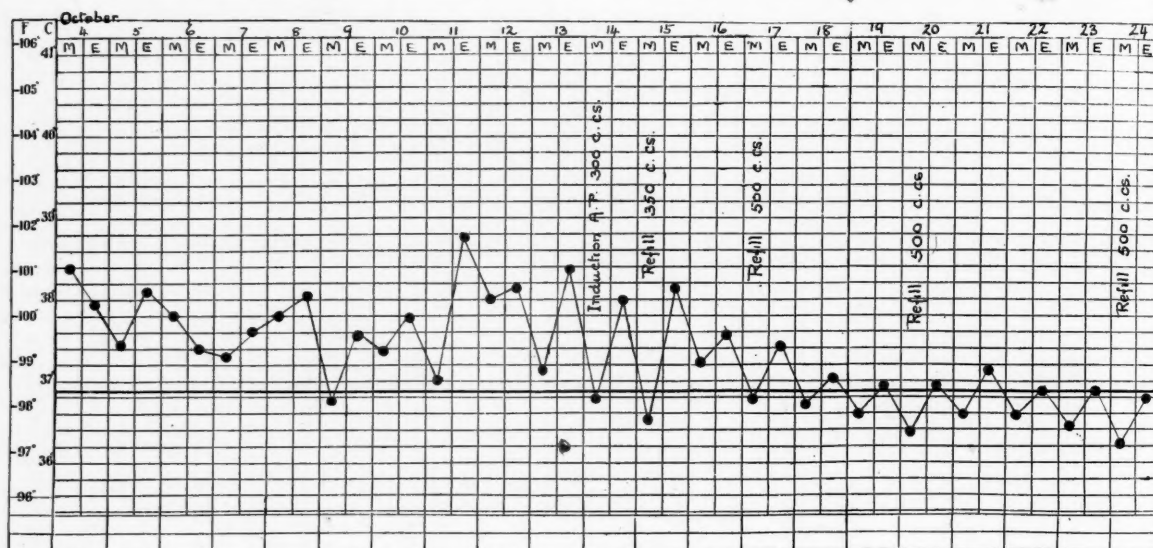


CHART I.

much more severe character and last up to seventy-two hours. De Carle Woodcock states that in one of his patients the adhesion was heard to snap by the patient and nurse as well as by himself.⁽⁵⁾ As a rule, however, the process is a slow one.

Adherent pleura, if extensive, will naturally lessen the degree of collapse; its situation definitely alters the effect it produces. When present over a large area of the anterior or posterior surfaces, the degree of collapse produced may be considerable, but the radiological appearances may prove very deceptive.

In one patient the radiologist reported a very small amount of collapse at the base, yet the readings were as shown in Table II.

There was possibly a layer of adherent pleura on the anterior aspect presenting a thin layer of lung to the rays.

requirements of each individual patient is necessary. In the first place, pressures will alter considerably after the surrender of an adhesion, as has been shown. The pressure + 3 to +5 which had been the optimum pressure prior to surrender, was afterwards no longer so, + 1 to + 5 being then the desired pressure.

A comparison may be made between two patients in whom the conditions were radiologically similar. That, however, is where the similarity ends, for in one instance pressures of + 3 to + 4 were necessary, whilst in the other - 2 to + 2 were sufficient. The condition of the first patient was not at all satisfactory and the second did exceptionally well. One more instance will suffice. Though the left upper lobe was the portion of the lung principally affected and the radiologist reported that it had hardly begun to collapse, tubercle bacilli were absent from the sputum, the temperature had fallen

to normal and the patient was up six hours a day. It will be clearly seen that the knowledge of the pressures and the degree of collapse is not sufficient evidence on which to base any conclusion as to the patient's condition. In deciding on the optimum pressure the following points require to be investigated: (i.) The temperature, (ii.) the amount and nature of the sputum, (iii.) the weight, (iv.) the presence of complications, (v.) intra-pleural pressures, (vi.) the degree of collapse, (vii.) the radiological appearances.

The Temperature.

The usual result on the temperature is to bring it more or less rapidly to within normal limits. Many patients will present a normal temperature within seven to ten days after induction. The immediate effect is a temporary rise of from 0.5°C . to 1.5°C ., followed by an approach to normal and interrupted by a slight reaction following the first fillings. This is exemplified in Chart I.

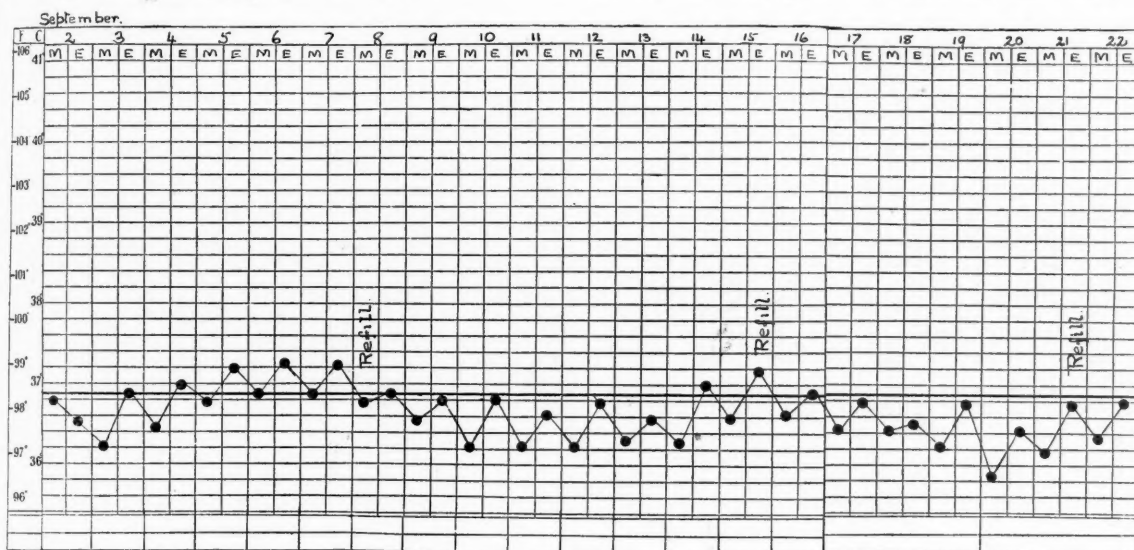


CHART II.

Should the pyrexia continue, it may mean that the degree of collapse present is insufficient to affect the diseased area which may be prevented from collapsing by strong adhesions. If there be any activity in the lung not subjected to treatment, the rise in temperature will be explained.

There are occasions in which the presence of a slight rise in temperature may be temporarily ignored if the cause be known. Constipation will produce considerable pyrexia at times and temperatures of 37.8°C . (100°F .) are relatively common during menstrual periods. An evening rise of one degree may occur for one or two days prior to refilling. This happens most often in the early stages and means that the intervals are too long or that the pressures being used are too low. It may be corrected by shortening the periods between fillings and provided there be no contra-indications, by raising slightly the pressures (see Chart II.).

At the onset of a hydro-pneumothorax pyrexia is common, but in some instances large effusions may form without any disturbance in the temperature. In not a few instances the rise in temperature is the first indication of pleural effusion though in others pain around the costal margin accompanied by nausea or anorexia may have been present for some days.

It has been stated that, provided there be no organic lesion of the alimentary tract, the temperature of pulmonary tuberculosis is independent of the state of the digestion. This may on the whole be true for no doubt in many cases the pyrexia and the indigestion subside together as a result of the diminution of the activity of the tuberculous process consequent on rest in bed.

Apart from this conception the subsidence of both these symptoms has so often been noted following suitable treatment of the indigestion that the writer doubts the veracity of this statement and offers as

a suggestion that in some cases a temperature of 37.2°C . or 37.4°C . may in the absence of any other discoverable cause have its origin in the disturbed state of the digestive function.

The Amount and Nature of the Sputum.

The majority of patients prior to induction present some sputum and during treatment this should be measured and examined from time to time. The routine of a sputum examination once a month during the continuance of treatment will be wisely adopted. Whilst a failure to isolate organisms conveys nothing in the diagnosis of tuberculosis, it is certainly of some value in these cases if performed periodically by the same observer. When there have been previously four or five bacilli per field and latterly one or two, a failure to find organisms is indeed hopeful. Only when the sputum has entirely disappeared can any stress be

laid upon the optimum collapse having been found. It must be remembered, however, that the functioning lung is commonly bronchitic and may be the source of origin of a sputum free from tubercle bacilli.

Again, the sputum may disappear whilst the degree of collapse is still slight, so slight that it cannot be sufficient to allow of arrest of disease in the affected area—still further evidence of the inadvisability of accepting any one observation as a guide to the optimum pressure.

The Weight.

This is one of the most valuable signs we have, for inasmuch as the patient is gaining in weight the activity of the infection must be lessening. Clive Rivière states that the weight under pneumothorax therapy is often the least satisfactory item and that whilst young subjects commonly gain weight from the outset, older patients gain in weight but slowly, if at all and may never reach their former level, though completely recovered in health.⁽⁶⁾ Many theories have been advanced for the explanation of this unsatisfactory state of the weight and have been discussed by the writer in these columns under the heading of mediastinal influence.⁽⁷⁾

The Presence of Complications.

Complications may cause a temporary or even permanent alteration of pressures and, if of a non-pulmonary nature, may alter the value of any one or more of the points which go to form the basis for deciding the optimum pressure. Tuberculous lesions may be the cause of a continued pyrexia or of a stationary or diminishing weight and this would have to be reckoned with in any decision as to pressures.

A hydro-pneumothorax with the increased intrapleural tension which it develops, causes a temporary disturbance and ultimately necessitates the finding of a new tension suitable to the post-effusional conditions. Palpitation is occasionally troublesome. It is doubtful whether this results from excessive pressures with mediastinal displacement or if it be a complication of the digestive disturbance which is so common in pulmonary tuberculosis.⁽⁸⁾

Intra-pleural Pressures.

Burrell and Wingfield are both of the opinion that the pressures attained and not the amount of gas introduced should be the guiding factor in the operations of induction and refilling⁽⁴⁾ and with this the writer concurs. No definite limits can be placed on the amount of gas. Individuals vary enormously as to the pressures which can be regarded as optimal and the amounts necessary at each filling to reach these figures, but as a general rule pressures above a mean of $+5$ will usually be found unnecessary and inadvisable and will seldom produce any permanent result. Authorities differ widely in the pressures they deem suitable. Stivelman, Hennel and Golembe insist that, whilst there is no such thing as a standard optimal pressure, the best results are usually obtained when the intra-pleural pressure can be maintained at

— 2 to — 3 centimetres of water, in which case the affected lung is usually effectively collapsed and the untreated lung by virtue of the flexible mediastinum is slightly compressed.⁽⁹⁾ This statement can only be appreciated when one American view is remembered that in selective collapse the infiltrated area owing to its loss of elasticity is collapsed to a greater extent than the unaffected part. Gwerder would seem to hold this opinion.⁽¹⁰⁾ The writer was unable to confirm this by fluoroscopic examination and in only one instance was anything like an effective collapse obtained at atmospheric pressure. This negative pressure may prove sufficient in the absence of adhesions, but it is so rarely that an infiltrated area is seen free from pleural bands that this cannot be a general rule. Selective collapse is certainly advantageous in some cases and is fast winning opinion in its favour in English circles, but on different grounds from these.

On the other hand Rivière takes the view that in a complete or nearly complete pneumothorax a quite small positive pressure of $+4$ to $+5$ centimetres of water is generally sufficient to maintain that collapse and he quotes Saugman as considering $+10$ to $+15$ very high for a complete pneumothorax with normal pleura.⁽²⁾

A survey of the replies to the *questionnaire* in Burrell and McNalty's report to the Medical Research Council shows how widely opinions differ in regard to the pressure to be maintained after the lung has been collapsed. At one extreme we find the late H. D. Felkin who stated that he had maintained pressures of $+45$ to $+50$ for some time, and H. O. Blandford who gives his figures as about $+20$ whilst the majority favour pressures of $+3$ to $+6$.

The Degree of Collapse.

Should the collapse be complete in order to achieve the best results? This question can only be answered when pneumothorax has been the recognized treatment for selected cases of pulmonary tuberculosis over a very much longer period. Only when the after effects of treatment are known with certainty, will it be possible to class degrees of collapse as efficient or inefficient. It is seldom that a complete collapse is attained by insufflation alone and it will be necessary to watch carefully the results obtained when further means have been adopted to produce this degree of collapse. For some unexplained reason there appears to be a risk of rapid accumulation of pus with frequently fatal results in so widely open a pneumothorax. This has been reported from time to time and many operators because of this do not attempt to collapse the lung to this extent. Most authorities are agreed, however, that within limits the greater the degree of collapse that can be maintained, the greater are the chances of ultimate recovery. Jacobaeus in a lecture delivered before the Manchester Medical Society stated that of his patients in whom he had produced a complete pneumothorax after dealing with the adhesions surgically, double the proportion had returned to work as compared with those in whom a complete collapse had not been obtained.⁽¹¹⁾

These figures of Jacobaeus's go a long way in answering this question, but against them must be balanced the fact that so many observers have noted rapid effusion and death on the production of a complete pneumothorax. It is also a well recognized fact that effusions are less common in cases of partial collapse than when the pneumothorax is widely open. Against this, however, Jacobaeus found effusions to be no more common in his patients than when the pneumothorax was of considerable degree and no more difficult to deal with when present. When the pneumothorax is incomplete, the operator is always faced with the thought that this degree of collapse now considered optimal from all points of view will in a few months quite probably prove inefficient. If the lung can be further compressed, then all may be well, but if not, a condition which had been looked upon as favourable, may be rendered hopeless unless other means can be adopted besides insufflation. In one patient in whom the apex though infiltrated was held out by adherent pleura and only slowly collapsed, all symptoms had disappeared. Yet it was felt that if the upper lobe could not be compressed the ultimate outlook was not hopeful and a pressure which could be considered optimal from a symptomatic point of view, was not optimal from a standpoint of collapse or success of treatment in the future. In another instance in which sputum was only obtained before treatment commenced by resorting to mustard inhalation which had been given before the patient was referred to the clinic—a practice which cannot be recommended—the sputum appeared five months after induction for the first time and contained demonstrable tubercle bacilli. On radiological examination it was seen that cavities throughout the upper lobe were commencing to empty; these, whilst filled, had escaped notice in the earlier examinations. A refilling was promptly given, pressures slightly increased and, though the amount of sputum increased for the following few days, it was not long before the sputum contained no tubercle bacilli. It is hoped that the ultimate result will be favourable.

To summarize is to ask the question again. Is a collapse which is anything less than complete, ever optimal? Some would, the writer thinks, answer no, but it is apparent that of the large number of patients whose condition has been reported as arrested, the majority have responded to incomplete collapse as so few operators yet practice surgical treatment of adhesions. However, it yet remains to be ascertained whether these patients with "arrested" conditions ultimately die of pulmonary tuberculosis, for not a few observers report breaking down at varying periods after the lung has been allowed to re-expand. Further study must be undertaken to investigate whether the presence of one or two adhesions not too remotely situated from the root of the lung does not lessen the risk of pyo-pneumothorax without endangering the success of the treatment.

The Radiological Appearances.

All patients with artificial pneumothorax should be carefully and constantly watched under the

screen. Not infrequently indications for altering the pressures will be noted by this means before symptoms appear. Any excessive displacement of the heart or mediastinum with or without evidence of mediastinal hernia should be noted, pressures lowered and the condition observed again. Again, it may be noted that the collapsed organ is moving with respiration and, if there be no contraindications, the intra-pleural tension may be raised.

Effusion is occasionally seen before the clinical signs are manifest and may possibly explain the presence of such symptoms as pain around the costal margin and nausea. The functioning lung must not be neglected and pyrexia, unless the cause be obvious, should raise suspicion of spreading activity. A film will sometimes reveal this activity commencing in the functioning lung before clinical signs appear, the most usual sites being the apex and a fan-like area around the lower part of the hilum which is manifested clinically by crepitations appearing in the axilla and around the fifth or sixth interspaces. Pneumothorax treatment without the aid of radiology would at times prove insuperably difficult, but by its assistance the majority of uncomplicated cases cause no concern. Probably one of its most important uses is the keeping of the functioning lung under constant observation.

Summary.

If there be such a thing as an "optimum pressure," it is that pressure which suits all the requirements both immediate and future of the individual patient. It is not the maximum pressure nor the minimum which will control the symptoms at the moment. It is only arrived at after a careful review of all factors concerned and as any one or more of those factors differ, so must the pressure alter to suit the new balance of conditions then obtaining.

That it is not the maximum pressure possible is to be emphasized and it is during the earlier months of treatment, when the stability point is being sought for, that the danger of making the "optimum pressure" too high must be avoided.

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Reports of Cases.

A CASE OF PARAPHRENIA SYSTEMATICA, WITH TEN DIFFERENT FORMS OF HALLUCINATORY SENSATION.

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In the chapter on hallucinations in "Mind and its Disorders" Stoddart observes that in about 10% of patients troubled with these morbid phenomena, three senses are affected, while "a few suffer from hallucinations of five, six or even more senses." Since a search of other available literature on the subject revealed no further definite reference to the degree of frequency with which a multiplicity of the senses tends to be affected in any one patient, the following case seemed worthy of note. From the standpoint of clinical classification it would appear to fall most readily into the group designated by Kraepelin *paraphrenia systematica* and characterized by the insidious development of a continuously progressive delusion of persecution, to which are added later, ideas of exaltation without decay of the personality. It is placed midway between *dementia paranoides* and true paranoia. It is separated from the former chiefly on the ground that there is not the same destruction of the personality to justify the appellation dementia and from the latter because hallucinations invariably occur sooner or later and the delusions tend to be of a more fantastic nature.

Clinical History.

The patient, B., fifty years of age, has been ill for some years past and is now in hospital for the second time as a result of making a murderous assault on a fellow workman, the verdict of the jury before whom the cause was tried being "guilty but insane."

B. believes that he is persecuted by members of a secret society bent upon achieving his moral, intellectual and physical degradation and he asserts that their machinations against him assume the following forms:

(i.) Hearing: Voices constantly make objectionable remarks to him, calling him bad names of a sexual nature too offensive to repeat to the doctor. Whichever way he turns, the voice always seems to be coming "straight into his face." Usually the voices are in the Yorkshire dialect. (B. is himself a Yorkshireman.)

(ii.) Sight: "Photos," of an indecent nature are made to appear before his eyes or else the scene of his quarrel with the workman "is reproduced."

(iii.) Smell: They cause offensive smells to come up under his nose, "like the smell of human dirt." Very rarely he has pleasant sensations of smell.

(iv.) His food is made to taste objectionable, stale or bitter, while at times quite apart from meals a "disgusting taste comes into his mouth."

(v.) Touch: Sometimes when out on the recreation ground he has felt very distinctly a hand "coming from behind him and clutching his left shoulder." This mysterious hand attempts to force him to intrude himself on the female patients.

(vi.) Warmth: He sometimes feels the heat of an electric current all over his body. At other times "they

try to make different parts of him red hot." These sensations are mostly nocturnal.

(vii.) Cold: He has been made to shiver on three occasions, each time at some hospital entertainment, concert or picture show. (This is stated by Stoddart to be rare.)

(viii.) Pain: His spine is most painfully squeezed. His intestines are moved up and down in a painful manner (? a form of the epigastric sensation). Any little scratch or sore he may develop on his body is burnt by electricity.

(ix.) Psycho-motor: He feels his tongue move and that he is saying words under compulsion. He feels that his limbs are moved so that he is made to assume a threatening and aggressive attitude. Tanzi states that this latter phenomenon (movements in the muscles of the limbs) is very rare and presents itself in chronic delusional conditions. He says that it has never been observed apart from this.

(x.) Sexual: Sexual sensations are frequent and are specific sensations accompanied by orgasm, not merely cutaneous sensations around the genital organs.

Comment.

The case has perhaps an additional interest for those who accept the standpoint that the "hallucinatory voice" is the mode in which a dissociated system of ideas announces itself to the personality. There is evidence to show that the patient's abnormal state first manifested itself some months after the occurrence of domestic trouble, in which the question of his marital fidelity was involved with disadvantage to himself. This would afford an excellent field for the activity of morbid mechanisms of repression, dissociation and projection.

Completion of the clinical picture by the appearance of ideas of exaltation is now occurring. The patient is seeking to account for the virulent persecution to which he is subjected, by developing the delusion that he represents in himself the second advent of Christ, though this seemed so wonderful that at first he hardly liked to mention it to the doctor.

Acknowledgment.

I am indebted to Dr. J. T. Anderson, Inspector-General of the Insane in Western Australia for permission to publish this case.

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AN UNUSUAL CASE OF GANGRENE OF THE FEET OCCURRING IN AN INFANT.

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With Post-mortem Notes

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Clinical History.

W.S., *etatis* two weeks, was admitted to the Adelaide Children's Hospital on November 28, 1923, with a history of having had diarrhoea and vomiting for three days. He was passing four to five stools daily and these consisted of greenish fluid. He was the first child of his parents and had been breast fed for three days. This had apparently not been successful and the diet was changed to "Lactogen" which was given in a strength of one in four every two hours. On the day of admission he had taken barley water only. The parents were healthy. The mother had had no miscarriages.

On examination the infant had rather a dusky colour, the mucous membranes were slightly cyanosed. The temperature was 37.2° C. (99° F.). The pulse rate was one hundred and forty in the minute, its volume and tension were moderate. The respirations numbered twenty-eight. The skin was dry. The eyes were a little sunken and the fontanelle depressed. The heart and lungs were apparently normal. The abdomen was distended. The liver was large and smooth and extended to within 1.25 centimetres of the umbilicus. The feet were of a bluish colour, the left more so than the right. Pulsation in the *dorsalis pedis* artery was not felt. The feet were cold. Excoriations were present around the anus. The urine passed into the diaper apparently contained a large amount of blood. An intra-muscular injection of ten cubic centimetres of antidyenteric serum was given. In addition 0.3 cubic centimetre of castor oil and the same quantity of brandy were given every four hours and boiled water was given every two hours for twenty-four hours. On the following day the child was given a weak "Lactogen" mixture. He then weighed 2.76 kilograms (six pounds two ounces). Two days after admission the toes of the left foot were black. The gangrene slowly spread upwards and on the sixth day made appearance in the right foot. The diarrhoea continued, there were five to six stools daily and vomiting occurred several times each day. The temperature except for a rise to 37.3° C. on the third day, was normal throughout. The urine still contained blood. On the seventh day after admission the baby died. The pulse rate for several hours before death was about sixty in the minute. A Wassermann test was not carried out, but the child was thought to have congenital syphilis.

Acknowledgment.

I am indebted to Dr. J. B. Gunson, Honorary Physician to the Adelaide Children's Hospital, for permission to publish this case.

Post-mortem Notes.

Autopsy was conducted on December 5, 1923. The body was that of a moderately well nourished male child. The umbilicus was clean. There was dry gangrene of the left foot extending 1.25 centimetres (half an inch) above the malleoli. The toes of this foot were dry and the skin over them shrivelled and bluish-black in colour. The toes of the right foot were also gangrenous, but in them the condition was not so far advanced.

On opening the pericardial sac an early sero-fibrinous pericarditis was noted. The myocardium showed considerable parenchymatous degeneration. The *foramen ovale* was patent to a probe. There was a small *ante-mortem* thrombus in the right auricular appendix and on opening the left auricle the appendix of that side was found filled with a large *ante-mortem* thrombus. In the aorta a large *ante-mortem* thrombus obstructed the lumen from just above the origin of the renal arteries to past the bifurcation and extended into the iliac and femoral arteries. The kidneys manifested purplish engorgement, but the pattern was still recognizable. There were no signs of abnormality in the intestine. The right lung exhibited a small infarct in the middle lobe. The liver was enlarged and manifested considerable parenchymatous degeneration. Sections of the liver and spleen stained by Levaditi's method failed to reveal the presence of spirochaetes.

It would appear that a thrombus developed in the heart and that from this an embolus had become dislodged and finally become impacted at the bifurcation of the abdominal aorta. On top of this embolus extensive thrombosis had taken place.

Reviews.

LOCAL ANÆSTHESIA.

In view of the established recognition of local anaesthesia and the excessive amount of literature already published on the subject, the author of yet another book must be a very sanguine and enthusiastic person in expecting it to achieve any great measure of success. The publishers of

Farr's "Practical Local Anaesthesia" have done the work given them in an admirable fashion and the reproductions of the sixteen plates in colour from Gray and Testut, as well as the two hundred and nineteen engravings, are excellent. In the book itself the author has placed much that could have been eliminated both in text and in illustration.

In Part I. the first chapter fills sixteen pages of discussion on the general effects of anaesthetics, their toxicity, danger and accompanying mortality. It is a quite unnecessary introduction and by no means does justice to the subject. In the second chapter redundancy is again evident as no less than eighteen methods of producing local anaesthesia are discussed, most of which are now of historical interest only. In the paragraph on epinephrin (elsewhere termed adrenalin) no mention is made in regard either to the toxicity of this drug nor the contra-indications for its use although later on in discussing toxic goitres it is advised that the use of adrenalin be reduced to a minimum of 0.06 cubic centimetres to thirty cubic centimetres of solution. No mention is made of the method of elimination of these anaesthetic drugs by the body nor of any means of aiding the process or of combating possible toxic effects.

In the third chapter the anaesthetic problem is dealt with at great length and stress is laid on the point of the surgeon himself being the one to give the anaesthetic. The author states that the patient should rightly expect it so. The fourth chapter is devoted to the equipment and armamentarium and deals chiefly with a variety of instruments used and invented by the author. It hardly concerns the surgeon of average experience.

For practical purposes the book commences on page 111 with the fifth chapter on general technique and is worth reading although it is very discursive including as it does such subjects as Bier's venous anaesthesia, Kappis's splanchnic anaesthesia, methods of tying ligatures, surgical strategy, skin grafting *et cetera*.

Chapter VI. is straightforward anatomy of the sensory nervous system. Any standard text-book of anatomy would prove a better reference.

In Part II., which covers one hundred and ninety-four pages, there is laid down the detailed application of local anaesthesia to all areas of the body excepting the abdomen, with brief accounts of the various operations which may be undertaken. Further anatomical details are given as to the nerve supply of each region and numerous case records are quoted describing operations carried out. This feature of the book might well have been omitted in favour of more minute detail as to the technique of injection.

In Part III. the author deals with local anaesthesia in the surgery of the abdomen on the same lines as indicated for Part II. There is a preliminary chapter on general considerations chief amongst which is the author's technique for opening the upper portion of the abdomen by dividing the rectus muscle transversely. No account of spinal anaesthesia is given as the author has had but limited experience of it.

Taken as a whole the compilation of the book is not in accord with its title and this fact with the large amount of padding employed will prevent it coming into general favour.

SURGICAL NURSING.

DR. RUTHERFORD DARLING'S "Surgical Nursing and After-Treatment" is based on the requirements of the Australasian Trained Nurses's Association for its final examination in this subject.¹ The first part of the book is devoted to general surgical nursing; pathology, bacteriology, sepsis, wounds, hemorrhage, shock, surgical operations and cog-

¹ "Practical Local Anaesthesia and its Surgical Technic," by Robert Emmett Farr, M.D., F.A.C.S.; 1923. Philadelphia and New York: Lea and Febiger; Royal 8vo., pp. 547, with 219 illustrations and 16 plates. Price: \$8.00 net.

² "Surgical Nursing and After-Treatment: A Handbook for Nurses and Others," by H. C. Rutherford Darling, M.D., M.S. (Lond.), F.R.C.S. (Eng.), F.R.F.P.S. (Glasgow); Second Edition; 1923. London: J. and A. Churchill; Sydney: Angus and Robertson, Limited; Crown 8vo., pp. xii. + 566, with 129 illustrations. Price: 10s. 6d. net.

nate subjects are discussed in detail. The technique of special nursing procedures such as nasal feeding, the administration of saline solution by various routes and the preparation of lotions and standard solutions are clearly described. The second section is concerned with the regional application of these general principles; the nature of the operations on various parts and their special requirements as to preparation and after-treatment are fully set out. A useful chapter, by Dr. N. D. Royle, on "Massage and Movements," is appended.

The amount of detailed and accurate information which Dr. Darling has managed to condense into this comparatively small volume is little short of amazing; yet the style is lucid and the matter presented in eminently readable fashion. The frequent illustrations are clear and apt. More recent surgical developments such as infusion and transfusion and the use of bismuth, iodoform and paraffin paste ("B.I.P.P.") and the newer methods of treating fractures have been incorporated.

We have only two criticisms to offer. Dr. Darling has attempted too much: the fundamental principles do not emerge sufficiently clearly from the mass of detail. For example, the discussion of a sepsis and antiseptics occupies just half a page. On the other hand, long classifications of tumours and of the species of bacteria and fungi are given. These are surely not subjects with which the nurse's mind should be burdened. Our other criticism is that some essential nursing procedures are not treated in sufficient detail. For instance, the technique of the skin preparation for operation is dismissed rather cursorily; the preservation and care of rubber gloves is not mentioned; there is no account of what may be termed the basic requirements in the way of instruments for all major operations and the necessary additions thereto for special operations in different regions. Some of the space given to purely surgical matters and to therapeutic details might have been more profitably devoted to the actual duties of the surgical nurse. For this reason we feel that the book will prove of use to nurses rather as a work of reference than as a practical manual for everyday use. Those to whom it is secondarily addressed—junior students and dressers—will find it of great service.

We would again emphasize, however, that in spite of some faults in proportion and occasional errors of omission this is an eminently readable book, containing a wealth of detailed and accurate information.

THE MALARIA PROBLEM.

AUTOBIOGRAPHIES, written by men prominent in science and literature are often interesting, as the writer reveals as a rule not only his strong points, but dwells more or less extensively on his weaknesses and his main weakness usually goes through the book as a *leit motif*, especially when he deals with personal matters of a more intimate nature.

The memoirs of Sir Ronald Ross are very interesting for two reasons.¹ Firstly Sir Ronald Ross is certainly a genius in his own way and a mightily interesting personality and secondly the theme of his book, namely the positive proof of malaria transmission by mosquitoes, has changed an edifice of speculation to a solid building. It has given a new impetus to the spread of civilization in tropical countries where malaria has been endemic for years.

So much discussion has taken place as to who is *de facto* responsible for the far-reaching discovery and the name of Manson, the father of tropical medicine, has been quoted time out of number. Ross in his book gives a full exposition of the facts by quoting in full the letters which passed between him and Manson. And Ross says: "It has been said that he (Manson) selected me to verify his theory. Quite untrue. I selected myself and no one else really touched the work, till I had done it." This remark gives the position in a nutshell.

It is more than fascinating to pass under Ross's able guidance through the labyrinth of errors and wrong and right conclusions and we find Ross always undaunted, making for the one goal. Official interference, departmental jealousy, straight-out bad luck here and there in the selection of mosquitoes or of subjects, apparently unsurmountable difficulties, could not dampen Ross's enthusiasm.

There are few discoveries which have been so well and ably described as the malaria transmission by mosquitoes, a subject which perhaps lends itself particularly well to exposition as it is "a one man's discovery." Anybody who has done scientific work becomes fascinated by the description of procedure, more so since Ross's style is epic and breezy. His laughing and defying personality, his inexhaustible store of self-conceit and his strong sense of humour at the expense of others make light reading of otherwise unpalatable material. His descriptions of his battles with red tape and officialism, with crass ignorance and lack of interest in people of high position make interesting reading, especially as similar battles are still being fought daily and yearly all over the world.

Many other aspects of the big malaria problem are dealt with and only a careful perusal of the whole volume reveals the results of the intense mental concentration of a genius on one great subject.

The last part of the book is rather disappointing. Anyone who had the privilege of knowing Ross intimately, knew his disappointment that the practical application of his discovery had not been carried out by the majority of high officials and governing bodies and his bitter controversies made Ross's position still more difficult. The headline: "How to treat benefactors," gives an insight into his innermost mind. Anyone who knows governments and governmental ways, can easily realize that ideas of mosquito destruction cannot be favourably received by officials in the tropics as they entail years of continuous work and large expenditure with hardly any return except the lowering of the death rate and disease rate of a community. These statistics do not interest the high official.

Ross's book makes interesting reading and we can forgive Ross his boundless self-conceit which stands out throughout the book. He has done humanity a service which will never be forgotten as long as there exists an appreciation for high grade and useful discoveries.

THE TREATMENT OF TUBERCULOSIS.

IN "Rules for Recovery from Pulmonary Tuberculosis" Dr. Lawrason Brown has provided a little up to date manual, containing the essential information that each consumptive must know, if he is to get and keep well. As would be expected, the importance of rest is insisted on, especially in the early stages, and comprehensive instructions are given how it can be carried out under varying circumstances.

Food, fresh air and exercise are practically dealt with and suggestions made as to how a patient may best apply such curative agencies for himself. Explanations of body temperatures and weight as guides to the patient's condition are given, while control of cough without drugs is shown to be frequently possible.

While several chapters add little to the book's value, they contain a simple discussion of the disease, dangers of infection and how infection can be controlled. Reference is also made to the care of children and other points of personal interest to the consumptive.

The American seasons are different from those in Australia, otherwise the remarks regarding climate and clothing are applicable to the Commonwealth.

Simple as this book is, it should be of great benefit to all sufferers from tuberculosis.

¹"Memoirs: With a Full Account of the Great Malaria Problem and its Solution," by Ronald Ross; 1923. London: John Murray; Sydney: Angus and Robertson, Limited; Demy 8vo., xl. + 547, with eleven plates. Price: 24s. net.

¹"Rules for Recovery from Pulmonary Tuberculosis: A Layman's Handbook of Treatment," by Lawrason Brown, M.D.; Fourth Edition, thoroughly revised; 1923. Philadelphia and New York: Lea and Febiger; Crown 8vo., pp. 225. Price: \$1.50 net.

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Physicians and Surgeons.

It is a commonplace that certain diseases are claimed by surgeons or by physicians as surgical or medical affections. Man is cursed with a heritage of disease and the medical practitioner whose function it is to alleviate, mitigate or cure, sets up an artificial division in the category of diseases, so that those which lie on the one side may be handled by therapeutic measures, supposedly based on a foundation of aetiology, while those that lie on the other, are to be subjected to the drastic remedy of mechanical removal. This unnatural division of diseases is but the logical corollary of the very natural division of the medical profession into surgeons and physicians. Since the surgeon requires to be trained in manipulative dexterity and in the knowledge of the finer points of anatomy, it follows that it is the interests of the community that certain members should deliberately set themselves the task of acquiring the special knowledge and skill needed for operative treatment of disease and injury. Similarly the physician has to learn many things that scarcely concern the surgeon and his whole specialist training may be expressed in terms of physiology or as we would rather express it, in terms of medical physics and medical chemistry. Only rarely does the physician need that manual cleverness that distinguishes the competent surgeon. It must be remembered that both have the same fundamental knowledge and each should ascertain by reading what advances have been made in the science and practice of the other division. The general practitioner stands midway and by a judicious blending of the attributes and qualities of both often saves the patient from the extreme views of his specialist colleagues. It is thus admitted that the practice of medicine benefits not a

little by the introduction of practitioners who have equipped themselves either as surgeons or as physicians. Naturally these votaries seek to extend and enlarge the scope of their activities. The physician does so less than the surgeon, merely because everything appears to belong to him that the surgeon cannot show without doubt to be his domain. In some instances there can be no dispute concerning the wisdom of operative treatment of a special condition. As soon as an appendicitis is diagnosed, the patient is subjected to the tender mercies of the surgeon, not because the affection is a surgical one, but because it has been found that the mortality after early operation is much lower than the mortality after the highly unsatisfactory medical treatment of today. If enough were known concerning the exact aetiology and pathology of appendicitis, it might be possible to obtain as good or better results without the aid of surgery and then surgery would be out of place. Similarly the surgeon is required to treat persons with malignant disease, provided that the disease is situated in an organ that is accessible and that can be mutilated without undue risk to life. But some day we may know the cause of cancer and we may be able to discover what are its precursors and which of them can be attacked. Cancer is not a surgical disease in the accepted sense of this term. The treatment of the disease is still surgical, because of the complete failure of medicine and pathology to shed light on the process.

Debates are held from time to time on the treatment of particular forms of disease and in these discussions the surgeons and the physicians vie with one another in their keenness in proving that surgical or medical treatment is the correct line of attack. Recently at the Congress in Melbourne several debates of this kind took place. The subject of exophthalmic goitre was debated almost exclusively from this point of view. It is a pity that so much energy and so much time is occupied with a matter of this kind. At the present time surgeons have an opportunity of displaying their skill in removing the major part of the thyroid gland from persons with Graves's disease. Surgeons do well to discuss the minutiae of their opera-

tive technique and the indications followed in determining to operate. But surely these achievements can only be regarded with satisfaction from the point of view of the artist. A disturbance of a gland of internal secretion should be amenable to rational treatment without the sacrifice of the greater part of its structure. If medical treatment is unsatisfactory, it is because our knowledge of the causes of the hyperfunction of the thyroid gland is lamentably faulty. Graves's disease is treated by surgical means as a result of a lack of knowledge and the partial bankruptcy of medicine.

Our object in discussing this subject is to incite surgeons and physicians to relinquish the absurd plan of claiming special diseases as their own. Much would be gained if the men possessed of special knowledge and special skill in both branches were to regard every patient as a human being with something that must be removed if human ingenuity can bring about its removal. By combining the best method of treatment possible at the moment could be adopted and at the same time, it would become apparent to both when this treatment was an unsatisfactory expedient. The complaints that the surgeon or the radiologist does not see the patient until the disease is far advanced, is an eloquent appeal for greater confidence between the members of the medical profession. If the surgeon surrendered his claims and the physician recognized his limitations and the distressing amount of pathological ignorance, there might be a more rapid reduction in the mortality of curable diseases. For success in team work it is advisable for the general practitioner to adjudge between the extreme views of the specialists. This task, however, would be easier if there were a more frequent display of modesty and a readier admission of ignorance.

Current Comment.

HEPATOMA.

ADENOMATA of the liver may be single or multiple. A single adenoma has been described as an innocent encapsulated growth of epithelial cells. Such tumours are of rare occurrence. They may be divided according to their structure into those composed

of liver cells, those derived from bile ducts and those due to the inclusion of so-called adrenal rests. It is unusual to find a single adenoma in association with cirrhosis of the liver. Caminiti collected the records of twenty cases of single adenoma composed of liver cells and four of these were associated with cirrhosis. Rolleston thought that these tumours might be due to the separation of a piece of liver substance from the main portion of the liver during fetal life and its subsequent inclusion in the organ. Multiple adenomata of the liver due to hyperplasia of the liver cells are usually associated with cirrhosis, probably because cirrhosis is the commonest disease which destroys liver cells and make a compensatory hyperplasia necessary. The relationship between cirrhosis and multiple adenomata has been the subject of much discussion. Kelsch and Kiener in 1876 held that both conditions were due to the same poison and were the results respectively of proliferation of the framework and cells of the liver. Later investigators have supported this view. Baisaud described multiple adenomata as the halfway house between cirrhosis and primary carcinoma and Sabourin suggested the use of the term hepatoma as suitable for application to a transitional stage between adenoma and carcinoma. Muir maintained that no hard and fast line could be drawn between multiple adenomata in cirrhosis and primary carcinoma with cirrhosis. He thought that the former was potentially malignant from the outset. At the same time there have been reported occasional instances of multiple adenomata without cirrhosis.

Dr. A. F. Bernard Shaw has recently reported an interesting instance of a solitary liver-cell adenoma in a child.¹ The patient, a boy aged thirteen years, first came under observation in February, 1921. In March, 1921, a laparotomy was performed and a large tumour removed from the liver. The child made a good recovery and in November, 1922, was apparently quite well. The tumour was a large one. It weighed one kilogram and measured on horizontal section 15.5 centimetres antero-posteriorly and twelve centimetres in a transverse direction. It occupied the upper and anterior portion of the right lobe and its surface was covered only by the stretched-out capsule of the liver. The upper surface was found to fade off gradually into the liver substance and presented irregular, deep, branching furrows. The centre was glistening and fibrous, but the periphery was more cellular in appearance. The posterior and lateral aspects of the growth presented a clearly defined edge, but were not encapsulated. There was no cirrhosis and no thrombi were present in the blood vessels. The gall bladder was normal. Microscopically it was found that fibrous bands separated the tumour cells into masses of irregular shape and size. The broad irregular masses of tumour cells bore little resemblance to the trabecular arrangement of normal liver tissue. Some of the neoplastic cells resembled those of normal liver, but the majority were quite atypical. The nuclei were

¹ *The Journal of Pathology and Bacteriology*, October, 1923.

large, many were lobulated, some were hyperchromatic and others were much altered by nuclear vacuolation. Mitotic figures were scanty. In many cells the protoplasm was filled with small, ill-defined and colourless vacuoles. This vacuolation in some cells became extensive and the cell consisted of large vacuoles with shreds of protoplasm. Hyaline bodies were present in many cells. Dr. Bernard Shaw was unable to determine the nature of the vacuolar change and has described it as hydropic degeneration. No relationship could be traced between the nuclear vacuolation and that occurring in the cytoplasm. At the junction of the tumour with the liver there was a sharp differentiation between the neoplastic and liver cells and there was nothing to indicate the transformation of liver cells into tumour cells. The cells at the margin of the growth were more aberrant than elsewhere and mitotic figures were more common. A slight tissue reaction was noted at the periphery of the tumour in the form of clusters of mononuclear cells.

In discussing the nature of the tumour Dr. Bernard Shaw states that its general character leaves no doubt that it developed from liver cells. He thinks that it belongs to the rare group of liver tumours characterized by occurrence in infancy or childhood, by the presence of solitary growth and the absence of pathological change such as cirrhosis which might account for an initial hyperplasia of liver cells. He states that the majority of such tumours have shown malignant characters. Although the aberrant character of the cells in the tumour he has described, pointed to a certain degree of malignancy, the invasion of the vessels was not extensive, fibrotic and retrogressive changes were present and portions of the tumour still showed the structure of a simple adenoma. The anatomical evidence of malignancy was not very clear. The successful result of operation supports this statement. Dr. Bernard Shaw thinks that the tumour represents a stage in the transformation of a simple adenoma into a definitely carcinomatous liver cell tumour. He concludes that no sharply defined line can be drawn between simple and carcinomatous adenomata. For this reason he regards the name hepatoma, introduced by Sabourin, as particularly suitable to tumours of this group. Referring to the "hydropic" degeneration in the cytoplasm he expresses the opinion that the change is essentially a degenerative one and independent of nuclear vacuolation. In regard to the aetiology of these tumours he states that the conditions under which they occur, suggest a congenital origin, the defect being either occasioned by the separation of a group of cells from continuity with the rest of the organ or by a dislocation from the bile ducts. The absence of bile ducts in the tumour is in his opinion also in favour of a congenital origin. Although the possibility of some antecedent pathological condition cannot altogether be excluded in childhood, he is inclined to reject this on the grounds that such an antecedent condition would presumably result in the formation of multiple nodules or leave some other indication of its action.

MALIGNANT SPHENO-OCCIPITAL CHORDOMA.

AMONG the rare tumours of embryonic origin are the chordomata. These arise from the vestigial remains of the primitive notochord. Stewart in 1922 reviewed the literature on the subject. He collected the records of twenty-six cases. In fifteen of these the tumour was found in relation to the sphenoccipital synchondrosis. In nine it originated in the sacro-coccygeal region. In one of the remaining two instances there were multiple tumours situated in the jaws and in the other the tumour was situated in the superior occipital region. Stewart has recently reported another case of malignant sphenoccipital chordoma in conjunction with Dr. J. le F. Burrow.¹

The patient, a man of thirty years, when first examined by the authors, complained of cough, breathlessness, oppression in the chest, headache, blindness in the left eye, loss of power in the legs and unsteadiness on attempting to stand upright. The physical signs were such that a provisional diagnosis was made of tumour in the pituitary fossa pressing backwards on to the pons and by its forward growth involving the optic tract. The immediate cause of death was respiratory failure. At *post mortem* examination it was found that the central area at the base of the skull was occupied by an irregularly nodulated ovoid mass about the size of a hen's egg. Its antero-posterior diameter was 5.5 centimetres, its transverse diameter 6.5 centimetres and it projected upwards 3.5 centimetres above the base of the skull. The tumour was entirely extradural. There was no invasion of the *pia mater* or brain, nor was there any adhesion between them and the tumour. The tumour had lifted the hypophysis completely out of its bed and had caused it to become greatly stretched and flattened. There was an extreme degree of distortion and displacement of the central portion of the base of the brain. The tumour was found by microscopical examination to be alveolar and broken up into masses by strands of fibrous tissue. Mucoid degeneration was present in all its parts. In the younger portions the cells were in loose contact with one another. They manifested varying degrees of cytoplasmic vacuolation, owing to the presence of drops of mucin. A few giant hyperchromatic nuclei and occasional mitotic figures were seen. In the older parts it could be seen that the droplets of mucin had been discharged and had formed intercellular masses.

In commenting on the condition Burrow and Stewart state that the tumour presented the salient features of chordoma, a lowly malignant tumour, locally invasive and destructive and only rarely giving rise to metastases. They state that as no instance of chordoma has been recorded as arising along the course of the dorso-lumbar region of the spine it would appear that these tumours do not arise from the *nucleus pulposus* of the intervertebral discs themselves. They think it most probable that they arise from the notochordal vestiges shown by Müller to occur in relation to the sphenoccipital synchondrosis.

¹ *The Journal of Neurology and Psychopathology*, November, 1923.

Abstracts from Current Medical Literature.

OPHTHALMOLOGY.

Intra-Cisternal Injections in the Treatment of Luetic Optic Atrophy.

S. R. GIFFORD's ideas on the curability of syphilitic optic atrophy were modified by the following case (*The British Journal of Ophthalmology*, November, 1923). A syphilitic, aged forty-eight years, noticed failure of vision in the right eye for eighteen months and in the left eye for ten days. The vision in the right eye was 20/100 and in the left eye 20/20, but with a field contracted to about 15° all round. The right eye presented a large central scotoma. Both nerves showed a picture of simple atrophy. After mercurial inunction for a week he was worse. As the condition was desperate he was referred to G. F. Suker, of Chicago, from whom he received four injections of 0.0012 gramme (one-fiftieth grain) mercuric bichloride into the lateral ventricle in the course of three months. After ten months vision was 20/15 in both eyes with correction. All colours were perceived in both eyes and the fields were distinctly improved. He could read fine print easily. The nerves appeared the same. About two years later his condition was unchanged. If an activeluetic process is at work, the possibility at least exists that it may be stopped if the spirochaetes can be killed. The difficulty in neuro-syphilis lies in the fact that the seat of the active process is hardly accessible by the usual modes of attack. Five other patients were treated on similar lines except that injection into the *cisterna magna* replaced that into the ventricle. In certain instances the cranial injection was followed next day by an intravenous injection of "Salvarsan" on the supposition that the drug would penetrate the meninges more readily during the reaction from the injection. The author concludes that this form of treatment has given better results than other methods previously tried. Intra-cisternal injection is a relatively simple and safe procedure.

Intra-Cranial Injections of Mercuric Bichloride.

J. J. KEEGAN (*The British Journal of Ophthalmology*, November, 1923) explains that the first five injections in a series of twenty-four given by him were made into the anterior horn of the right lateral ventricle through a trephine opening. Cisternal puncture obviates the necessity of incision or trephine and is safe and not difficult. The eighteen gauge lumbar puncture needle is inserted in the neck, directly over the prominent spine of the second cervical vertebra. It is directed upwards in the mid line at an angle of 45° and is felt to pierce the dense occipito-atlantal ligament between the occipital bone and the

first cervical vertebra. It enters the cerebro-spinal fluid space between the cerebellum and medulla, at a depth of from four to six centimetres. The thickness of the neck must be judged. Injection is made by the gravity method. Twenty-five cubic centimetres are removed by syphonage. Ten cubic centimetres are saved for examination and the bichloride is added to the remainder and allowed to enter the cisternal space by gravity pressure. There is an immediate reaction of severe occipital and frontal headache with nausea, vomiting, fall of blood pressure, pallor and sweating. The headache persists for a few hours. For some days there may be stiffness in the sub-occipital region. In recently treated patients the injection has been followed by an intravenous injection of "Neo-arsphenamine" the next morning.

Hemianopia, the Sole Feature in Secondary Syphilis.

A. W. S. SICHEL AND A. R. FRASER (*The British Journal of Ophthalmology*, November, 1923) states that generalization of syphilitic infection has occurred before a chancre appears. Two strains of infection may be conceived, the dermo-trophic and the neuro-trophic according as the skin or nerve elements are the more vulnerable to attack. The manifestations of neuro-syphilis are partly meningo-lympho-vascular and partly parenchymatous. The author reports the history of a patient which, he states, is interesting because the ocular lesion was the sole evidence of the disease when signs would have been expected in the skin and mucous membranes. The optic nerve may be secondarily affected by extension of changes in the meninges or the atrophy may be of the toxic parenchymatous group. The most common lesion is compression by gummatous proliferations or infiltrating meningitis. Optic neuritis, irregularities in the field of vision, scotomata and optic atrophy are well recognizedluetic stigmata. The patient, a man of twenty, had a chancre which healed without any treatment in eight weeks. There was no other evidence of infection until four months later he noticed a "film" before his eyes towards the right side. When examined the serum yielded a "++++" reaction to the Wassermann test. The right vision was 5/36, the left vision was 5/5. Examination of the field of vision revealed complete loss of vision in the right half of each field. He received 1.95 grammes of "Nov-arseno-benzol" intravenously in four weeks and 0.02 gramme of mercury protoiodide in the form of a pill thrice daily. By this time the fields had much improved.

Amoebic Iritis.

LLOYD MILLS (*Archives of Ophthalmology*, November, 1923) reports the history of a woman of middle age who suffered from intractable, plastic iritis in the right eye for ten years. This

led finally to occlusion of the pupil, secondary glaucoma and blindness, the intolerable pain finally forcing an enucleation. An identical iritis started in the remaining eye three weeks after the enucleation of the first. The prominent symptoms were constipation, pallor, pains in the joints and intense weakness and lassitude. The chief findings were a definite secondary anaemia, decided tenderness over the colon and presence of a large number of *Entamoeba dysenteriae* in the stools. A simultaneous cure of the iritis, of the abdominal symptoms and signs and of the general extreme depression resulted from two intensive courses of treatment with ipecuanha and emetin and coincided with the disappearance of the amoebae from the stools. The author emphasizes a warning against the prevalent idea that diarrhoea is a necessary symptom of amoebic infection. Five other cases have come under this notice. The iritis arises probably from an amoebic embolus.

Marginal Degeneration of the Cornea.

F. E. KOBY (*Revue Générale d'Ophthalmologie*, June, 1923) describes a case of marginal corneal degeneration as seen by the naked eye and with the split lamp. His patient, a man of fifty-three, had had a pterygium removed from the right eye sixteen years previously. He returned for a similar operations on the other eye. He had a tuberculous family history. It was observed that the upper margin of his right cornea was opaque, the condition resembling *arcus senilis*. The opacity was crescentic in shape and towards the nasal side contained a clear zone three millimetres broad shaped like a haricot bean, in which the corneal tissue was thinned to one-fourth of the normal thickness. It was ectatic and was underlined by a dim white line of opacity. The eye showed over nine diopters of astigmatism. The vision was bad without glasses and came up to 5/6 with correction. The condition is rare. In thirty-nine affected patients only ten were women. The eye has been known to rupture with expulsion of the lens.

Implantation Cyst of Iris and Ciliary Body.

W. B. BROWNIE AND H. NEAME (*The British Journal of Ophthalmology*, November, 1923) report a case of cyst of the iris and ciliary body following an advancement for squint ten months previously. The cyst occupied nearly the whole of the lower temporal quadrant of the iris except a strip near the pupillary edge. The conjunctiva adjoining showed the signs of a recent advancement operation and near the limbus were seen two small black objects in the sclera which were evidently perforations. Two unsuccessful attempts were made to remove the cyst and finally the eye was enucleated. The sclera had been perforated by the advancement suture and probably a tag of conjunctiva drawn into the middle hole had been implanted in the underlying ciliary body.

LARYNGOLOGY AND OTOTOLOGY.

Referred Pain of Nasal Sinus Disease.

J. A. GIBB (*The Journal of Laryngology and Otology*, January, 1924) states that the usual sites of referred pain in disease of the maxillary antrum are invariably parietal, occipital, in front of the tragus, in the helix, the concha or the mastoid process and the cavum. In the case of the frontal sinus the pain will depend on whether the duct is partially closed or entirely so and whether it is one of empyema of the sinus or not. The pain is frontal and occipital. In disease of the anterior cells of the ethmoid the pain is in the eyeball and maxillary process and across the bridge of the nose. In the posterior cells the pain is in the back of the eye and on the top of the head. The pain in disease of the sphenoid sinus is at the back of the eyes and of a boring character at the top of the head.

Function of the Vocal Cords.

V. E. NAGUS (*The Journal of Laryngology and Otology*, January, 1924) considers that the larynges of animals do not show any definite relation to the vocal powers of their possessors and that many laryngeal structures such as the epiglottis, aryteno-epiglottic folds, cartilages of Wrisberg and Santorini subserve the functions of respiration and deglutition and have nothing to do with voice production. He considers that these definite modifications have been evolved for the purpose of fixing the thorax for forearm work and come into play when the fore limbs are flexed on the trunk or are adducted. For efficient fixation of the thoracic wall air must be imprisoned in the thoracic cavity while the effort lasts. To imprison air the glottis must be closed; the vocal cords prevent air entering the trachea; the ventricular bands prevent its egress. Only in a few old world monkeys and man is found this valvular action of the ventricular bands, that is to say, an efficient mechanism for raising high intra-thoracic pressure. Nagus states, however, that in man during forearm effort the thorax is usually practically empty of air and that it is very exceptional for a preliminary deep breath to be taken. He remarks that the male at puberty develops coincidentally stronger forearms and longer vocal cords. He assumes that during efforts in which the forearms of an animal are moved by the lower fibres of the *pectoralis major*, it is necessary that the thoracic walls be fixed. This entails imprisonment of air in the thorax. As sphincteric muscular action is insufficient to control the air inlet under diminished or increased pressure, he assumes that valvular laryngeal action is brought into play and that as the only type of valve in practically all animals is one that can prevent entrance of air into the lungs, the air imprisoned in the thorax must be in a state of

reduced pressure. Among practical applications of this theory would be the advisability of absence of forearm efforts when rest of the larynx is desired. This would especially have to be observed in cases of abductor paralysis, whereas movements of adduction would favour formation of a glottis after removal of a vocal cord.

Otitic Meningitis.

G. J. JENKINS (*The Journal of Laryngology and Otology*, June, 1923) urges that an attempt should be made to recognize lepto-meningitis at the early stage when the infection is local, though this may be only for a short period and when there is evidence of a region of maximum intensity of inflammation. Treatment at this stage may prove successful. The study of the cerebro-spinal fluid is important and its characters depend chiefly upon the site of maximum infection and the stage reached by the inflammatory process. The middle fossa is usually infected through the roof of the middle ear and the changes found are those of localized meningitis and meningeal or cerebral abscess. When infection of the arachnoid and sub-arachnoid space has occurred, the tendency is for it to spread in an upward and inward direction from the site of infection. The changes in the cerebro-spinal fluid may be slight; gross changes do not occur until infection of the cisternæ takes place. Posterior fossa infection may occur by way of the labyrinth and through the posterior antral wall or be secondary to secondary thrombosis of the lateral sinus. Infection of the meninges *via* the labyrinth involves the *cisterna pontis*. Infection following septic sinus thrombosis involves the sub-arachnoid space primarily and the *cisterna pontis* secondarily. The author regards meningitis as a probable complication of acute labyrinthitis and therefore makes a complete examination to determine whether or not the inflammation has extended beyond the labyrinth.

Correction of Nasal Disfigurement.

DOUGLAS GUTHRIE (*The Journal of Laryngology and Otology*, June, 1923) claims that the most frequent deformity of the nose is defect of the bridge. The most frequent cause is traumatism. Early treatment is important. Crumpling of the septum and depression of the upper lateral cartilage must not be overlooked. When the deformity has been caused by disease, no operation of nasal reconstruction should be undertaken until the disease has been effectively treated. The repair of a sunken nose can best be secured by cartilage grafting. A resection of the septum may be needed to relieve obstruction and the removed septal cartilage made use of in restoring the bridge. A transverse incision is made at the root of the nose, 1.75 centimetres (half an inch) in length, the soft tissues are

raised from the bone and cartilage as far as the tip and partially from the sides of the nose. The seventh or eighth costal cartilage is exposed by a vertical incision through the right rectus muscle in the thoracic margin and 2.5 centimetres or more of cartilage without perichondrium removed. The resected portion is carved to the desired shape and introduced into the pocket prepared for its reception and the wounds closed by sutures. A bandage is worn for the first twenty-four hours and a firm cotton-wool pad retained over each eye and each side of the nose.

Bilateral Paralysis of the Laryngeal Abductors.

"CORDOPEXY" is the name given by IRWIN MOORE (*The Journal of Laryngology and Otology*, May, 1923) to an operation for overcoming the stenosis of the larynx due to bilateral abductor paralysis of the vocal cords. He considers the various methods which have been employed for this purpose, including simple division of the recurrent nerves, re-establishment of nerve continuity by resection and anastomosis, cordectomy, arytenoidectomy, ventriculectomy, eversion or ablation of the vocal cord and the soft parts lining the larynx and lastly ventriculo-cordectomy. None of these can be depended upon to secure the desired patency. In the method of cordopexy a thyreo-fissure is performed, a small triangle of cartilage (sides about six millimetres long) with the anterior end of the vocal cord attached is excised, the periosteum in the vicinity being elevated to release the cord and a small circular opening punched in the cartilage just wide of the triangular opening. Into this opening the anterior end of the vocal cord can be drawn laterally and anchored. Transferring a vocal cord six millimetres (one quarter of an inch) from the middle line was found to be sufficient to fix it in the position of complete abduction.

Experimental Physiology of the Labyrinth.

A. DE KLEIJN (*The Journal of Laryngology and Otology*, December, 1923) states that the different tonic labyrinthine reflexes do not play separately a great physiological rôle; they do so in combination with other reflexes. Tonic labyrinthine reflexes on the body musculature combined with tonic neck reflexes are of great importance in the different postures of normal animals. Labyrinthine righting reflexes combined with various other groups of righting reflexes cause the animal to bring back its head, trunk and limbs from any abnormal position into the normal. Tonic labyrinthine reflexes combined with tonic neck reflexes affecting the eye muscles and combined with reflexes arising from the semi-circular canals make it possible for the visual field to remain unchanged when the animal moves its head from the normal into some other position in space.

British Medical Association News.

ANNUAL MEETING.

TASMANIAN BRANCH.

THE ANNUAL MEETING OF THE TASMANIAN BRANCH OF THE BRITISH MEDICAL ASSOCIATION was held in the rooms of the Royal Society of Tasmania, Hobart, on February 20, 1924, Dr. GREGORY SPROTT, the President, in the chair.

Annual Report.

The annual report of the Council was read, received and adopted.

Annual Report for 1923.

Your Council has to report a successful year and an increase of membership of five. There were eighty-one members at the beginning of last year, of whom two have died, one has resigned, four have left the State, five new members have been elected and seven have moved into area of the Branch.

At a representative meeting held in Launceston in October it was decided that two divisions should be formed, the dividing line to pass through Tunbridge East and West. Approval to the scheme has been received from the Home Council.

There were eleven monthly meetings of the Branch with an average attendance of twelve, one special meeting with twenty-three present and twelve meetings of the Council with an average of 5.5 present. Your Council made several deputations to the Honourable the Chief Secretary in the endeavour to re-establish the honorary system. The result of these interviews have already been placed before the members of the Branch.

Election of Office-Bearers.

The following were elected office-bearers and members of the Council for the ensuing year:

President: DR. G. E. CLEMONS.

President-Elect: DR. J. RAMSAY.

Vice-President: DR. D. H. LINES.

Members of Council: DR. J. STODDART BARR, DR. T. BUTLER, DR. H. N. BUTLER, D.S.O., DR. H. W. SWEETNAM, DR. GREGORY SPROTT.

Honorary Treasurer: DR. E. A. ROGERS.

Honorary Secretary: DR. E. BRETtingham-MOORE.

President's Address.

THE PRESIDENT, DR. GREGORY SPROTT then vacated the chair which was taken by DR. D. H. LINES in the absence of the President, DR. G. E. CLEMONS. Dr. Gregory Sprott then read his address (see page 277).

Honorary Hospital Staff.

It was unanimously decided that following on the invitation of the Launceston Hospital Board a conference be held between northern members of the Branch and the Board to decide on the terms of appointment of an honorary staff, the proposals to be submitted to the Branch for approval.

MEDICO-POLITICAL.

REPORT OF THE SUB-COMMITTEE OF THE FEDERAL COMMITTEE (DR. F. S. HONE AND DR. H. S. NEWLAND, D.S.O., C.B.E.) ON COOPERATION OF THE MEDICAL PROFESSION WITH THE COMMONWEALTH DEPARTMENT OF HEALTH.¹

FOLLOWING on the discussion at the last meeting of the Federal Committee on the relationship of the general practitioner to preventive medicine, the present sub-committee was asked to prepare a report as to possible improvements in the public health system and means of bringing the general practitioner into more active cooperation with administrative authorities in preventive measures.

¹ This report should have been published in last week's issue as an addendum to the proceedings of the Federal Committee of the British Medical Association. It was held over owing to lack of space.

The discussion showed that at present different systems prevail in the different States.

In some, administrative measures with regard to health are delegated to local bodies. Sydney and Melbourne are the only two municipalities which employ a whole-time health officer. In all States except New South Wales within municipalities (except Melbourne) and in country districts, a part-time health officer is employed, who as a rule is also in general practice. These smaller local governing bodies also employ as sanitary inspectors men who are performing other municipal functions. Experience has shown that under these conditions the medical practitioner who is officer of health, if he endeavours to carry out his health duties seriously, is at a disadvantage in his practice compared with his colleagues who are practising only; on the other hand, as health officer his salary is quite inadequate for any serious health work; he often has to fight against local vested interests and progress in health measures consequently is lacking. The failure of this method is testified to by Dr. E. S. Morris, State Director of Public Health in Tasmania, who says in *Health*, September, 1923:

The local officer of health, not being vested with essential responsibility and receiving a mere pittance in the nature of a retaining fee, cannot afford to give his attention to health administration which will often bring him into conflict with his prospective patients. His function in the community is, therefore, primarily curative when it should be preventive and until the medical officer of health, whether as general practitioner or full-time officer, is retained as an active unit of public health administration, responsible to the controlling body of the State, we must fall short of the ideal.

In New South Wales the medical staff are confined to central administration and to large municipalities. Local governing bodies have certain administrative powers in that State, but any measures for the prevention of the spread of isolated infective cases must be carried out by the practitioner at his own or the patient's expense until a definite epidemic threatens, when medical officers are sent to the district from the central administration.

In all the States the private practitioner notifies to local or central authorities cases of certain prescribed diseases, but beyond this his activities generally cease. This limitation of activities not only results in a lack of coordination between public health administrators and general practitioners, with a consequent atmosphere of distrust on both sides, but fails to utilize and develop the interest and activities of the bulk of medical practitioners in any public health scheme. In order to avoid a clash with non-medical administrative officers (*exempli gratia* sanitary inspectors and nursing inspectors) the practitioner often feels compelled to maintain an attitude of passivity towards preventive measures and to limit his interest to curative methods; the medical administrator consequently thinks he is uninterested.

Now that a definite course of lectures and an examination in public health and preventive medicine are in vogue in each of our universities, it would seem the natural corollary that the same opportunities should be offered to practitioners to carry the idea of prevention into their daily work in medicine as is the case in surgery. If it is regarded as essential that hospitals should place at the disposal of surgeons the necessary facilities for preventive surgery it is just as essential for necessary facilities to be offered by administrative bodies for the general practitioner to participate in preventive medicine. There are two such facilities that should be immediately offered: (i.) Increased proximity and accessibility to facilities for laboratory aids to diagnosis for country practitioners or for those practising in centres removed from the metropolis. As it will never pay a private practitioner to set up the laboratory necessary for this in country districts, it becomes the duty of some administrative body to provide such laboratory, just as operating theatres are provided in country hospitals. (ii.) Alteration of departmental machinery so that the graduate who has learned the principles of prevention in his university studies may apply these in his practice; in this way men who are interested in public health problems will gradually

develop as specialists in public health, just as men develop now from general practitioners into specialists in surgery or medicine. Under the present system there is no opportunity given to the general practitioner to develop this side of his work into a specialty if he so desires.

There is a further difficulty that with the present lack of correlation between State and Commonwealth activities there is a constant fear in the mind of the medical administrators in both State and Commonwealth Departments of overlapping or of intrusion. In any scheme considered by the medical profession as a whole, this aspect should be considered, seeing that administrative medical officers are just as much members of our profession as general practitioners and the profession should therefore be seeking to remove any obstacles to the performance of their best work just as it does with practitioners.

Moreover, this fear of overlapping and intrusion is a serious obstacle to progress. It prevents concerted action for the preservation of national health, it destroys initiative and either from this cause or from lack of foresight on the part of the profession fields of enterprise which are directly connected with public health, have been gradually removed from any control by the medical profession. One has only to instance the administration of the *Factory Acts*, of water and sewerage control, of town planning and similar activities to show the extent of this alienation.

Without going into further details, it may be agreed as a preliminary basis:

(i.) That the present system is unsatisfactory: (a) In its lack of uniformity in various States; (b) in the fact that in no State is the service of the practising practitioner officially utilized for the prevention of diseases to any degree consistent with his knowledge and opportunity; (c) in the absence of facilities for gaining accurate knowledge of possible infectious conditions except at long distances and the lack of inducement for the practitioner to develop his public health knowledge; (d) in the absence of adequate encouragement for the general practitioner to enter public health service as a professional specialty; (e) in the want of correlation between different States or between States and Commonwealth, with consequent overlapping or friction or loss of efficiency; (f) in the absence of any control of the health of large sections of the community engaged in industrial employment; (g) in the small improvement that has been gained in national health in return for the large sums of money spent in recent years by the Commonwealth on maternity bonuses, in subsidies to venereal campaigns and in pensions for tuberculosis and other ailments; (h) in the slow fall of recent years in the incidence of such diseases as pneumonia, diphtheria, typhoid fever, scarlet fever, measles and similar diseases.

(ii.) That it is impossible to bring in any complete Commonwealth control of public health administration without a profound change in the Constitution and that under present conditions this is also, therefore, impracticable.

(iii.) That under these circumstances any scheme to rectify existing conditions must have as its immediate ideal: (a) An administrative scheme somewhat on the model of the United States Public Health Service where both States and Commonwealth play an active part; (b) a clear definition of the respective duties of States and Commonwealth; (c) the linking up of the general practitioner into active participation in the administrative scheme; (d) the steady inculcation of the ideal of prevention, rather than of carrying out Regulations, into both the actively administrative and actively practising members of the profession.

The unit in any such scheme would thus be the general medical practitioner. For such a scheme to be truly effective the registration of medical practitioners would need to be a Commonwealth matter, the States being asked to pass the small piece of legislation necessary to hand this over. The need for such a change is already being increasingly felt by the medical profession for various other reasons. A medical board in each State of the same

constitution and with the same general functions as at present should be preserved, all working under the same Commonwealth Medical Registration Act and registration by any board being effective throughout the Commonwealth. In addition to the usual clauses allowing removal from the register for various offences, there would need to be a clause enacting that gross or repeated instances of neglect of health duties by any practitioner, empowers the district health officer to report that practitioner to a registration board. There should be adequate safeguards that this should not be done for moral offences. Practitioners are already liable to fine under *Quarantine and Public Health Acts* for neglecting to report infectious cases *et cetera*. Instead of an extension of this system it would seem advisable that more serious neglect of health responsibilities should be dealt with by his professional colleagues who would constitute such a board, than by legal processes, for advance to a more active preventive conscience in such individual practitioners depends on education and persuasion primarily. But ultimately there would have to be disciplinary or even punitive clauses.

Medical Unit.

On the medical side the unit is the medical practitioner, whether in general or special practice or acting as medical officer to industrial or school organizations or to institutions. In addition to the treatment of his patients he should—

(i.) Notify to his district health officer on prescribed forms: (a) All births, stillbirths and miscarriages. Objection has been taken to this suggestion on the grounds that it would be impossible to secure notification of miscarriages in single women. The force of this objection is recognized. If it is so strong that notification of miscarriages would be a dead letter, it had better be dropped. On the other hand, it must be recognized that the notification proposed is to a medical not lay authority and that if the medical profession is to take its share in the lessening of criminal abortion, some such step will ultimately be necessary. Confidential notification of miscarriages by married women would frequently lead to the institution of treatment for otherwise overlooked maternal syphilis. Notification of stillbirths to the district medical officer would have the same effect. Notification of births to such authority would be of great value statistically and would assist in infant welfare objects. (b) All deaths. At present the death certificate is given to the relatives or undertaker and is largely formal. This practice would continue for burial purposes, but in addition a confidential notification to be made to the medical officer as is at present done in Switzerland, could often show the relation of the cause of death to a previous infection in a way that is impossible now. This would afford more accurate statistical information and would make available a mass of information that is at present unutilized for public health purposes. The need is so greatly felt that some States already have a private arrangement between the Principal Medical Officer of the State and the Registrar of Deaths, by which the latter forwards to the former copies of certificates relating to deaths from infectious causes. The present suggestion would gain the same object in a much more direct and far-reaching way. (c) All cases of communicable disease prescribed by the regulations. (d) *All cases of mineral (lead *et cetera*) or organic (alcohol *et cetera*) poisoning.

(ii.) Order in writing prescribed methods of concurrent and terminal disinfection in infectious cases. The methods would be prescribed by the State health authorities (with the conference of State health authorities suggested later in the scheme these would soon become uniform in different States). The prescribed methods would be printed on different forms for different diseases. The practitioner would only need to sign one of these and hand to householder, just as quarantine officers in different ports now hand fumigation orders to captains of vessels which require fumigation.

(iii.) Carry out the prescribed methods for the prevention of the spread of infection by contacts or carriers (*id est* throat swabs, collection of urinary and faecal specimens *et cetera*). At present some of these are done by nursing or sanitary inspectors. It would be far quicker

and more efficient for them to be done by the practitioner seeing and treating the case.

(iv.) Examine school children in particular districts by arrangement with the district health officer and education authorities. Such a provision would chiefly apply to country schools and might occur with regard to a particular threatened epidemic or with regard to physical examination of school. It would afford opportunity of cooperation of educational and health authorities in special cases.

(v.) Carry out other health duties as prescribed from time to time by regulations or as requested by district health officer. The objection has been raised that such a proposal puts the practitioner too much under the control of the district health officer. It must be remembered that in the discussion of a general scheme, some such clause must be inserted, to leave room for possible developments beyond the instances above cited. The term "requested" as opposed to "prescribed" is used to emphasize the fact that mutual cooperation between district health officer and practitioner is requisite to the scheme, rather than the purely formal carrying out of legal enactments.

NOTE.—For all such services rendered the practitioner will receive fees prescribed by regulation. There would thus be an incentive to him to increase his activities; the more interest he showed in preventive measures, the more his remuneration; part-time medical officers would be abolished; all men in practice would be on the same level in relation to departmental administration.

Administrative Unit.

On the administrative side the unit is the municipal district or shire council. (Different terms are employed in each State, in some this body as regards health activities is termed the Local Board of Health). Some such unit is necessary to compel householders to correct nuisances and to carry out other legal formalities. At present, city councils in large municipalities are active and generally ready to accept the advice of their medical officer of health, because they are face to face with urgent problems. Experience has shown that country councils can only be induced to act by medical pressure from without; the local part-time medical officer cannot apply this pressure, the central administrative staff is too far away. This is where the district health officer would fulfill a useful function. Seeing that he to a greater or less extent would be independent of local councillors and that his appointment would not lie in their hands, it would bring a spur into action that is at present lacking. By means of the reports of his sanitary and nursing staff he could order and compel local boards of health to carry out necessary sanitary measures.

Above these units there would be side by side a State organization and a Commonwealth organization.

State Organization.

District Health Officer.—The district would be the city, town or area comprising adjacent suburban towns or rural district (or shire) councils. The district health officer would be a whole time officer and, if possible, all such officers from the outset should have a registrable post-graduate public health qualification. The active conduct of the various health measures and organizations in his district would be his responsibility. Attached to him should be a whole time sanitary inspection staff and a nurse inspection staff. In small or scattered districts he might act as medical inspector of school children; in large districts a separate officer would undertake this. Already in cities such officers exist acting as the medical officer of health, paid by the local rates. Just as this officer sometimes acts for several combined municipal bodies which were originally distinct, so in the country districts the district health officer would control the health of a collection of district councils. Dr. Armstrong, State Director-General of Public Health in New South Wales, put forward such a scheme for his State some years back, but for financial reasons the Government have not taken action. Dr. Everett Atkinson, Commissioner of Public Health, Western Australia, says in *Health*, January, 1924:

The most outstanding need at the moment in regard to this public health machinery is the division of the State into a number of areas, each under the direct supervision of a full-time medical officer of health, properly trained in the modern principles of preventive medicine.

Already in Victoria a beginning has been made with such whole-time district health officers, but as yet their activities seem to be largely concerned with sanitary surveys. Under a proper scheme this would be more a function of the sanitary inspection staff and the district health officer would be more concerned with advising and inspiring medical practitioners who are performing the details of health duties and in initiating and maintaining campaigns to avoid disease. His district should not be so large that he could not visit any part of it and return within a day.

The district health officer would thus receive reports of births, sickness and death from individual practitioners; would make suitable arrangements for examination of and report on specimens they might forward to laboratory; he would standardize disinfection measures for different complaints throughout his district; by the reports of his sanitary and nursing staff, he would be in touch with all conditions promoting the spread of disease; he would thus be able to direct the necessary activities for promotion of health in his district. Ordinarily in these matters he would see to the enforcement of the State *Health Act* and Regulations on the reports of his sanitary and nursing staff without reference to his central authority and he should similarly initiate necessary activities in connexion with such matters. Special insanitary conditions or outbreaks of disease he would refer to the chief State officer. In addition to his sanitary and nursing staff he would need the services of a district laboratory. The Commonwealth authorities have already established certain of these in the different States and they could well assist in the development of such a scheme by extending these laboratory facilities to different districts.

Salary.—The initial salary of such an officer should be a minimum of £750 a year, with periodic increases. Theoretically, as the salary of the municipal health officer is at present paid out of the rates of the municipality, the district health officer's salary should be paid from the health rate of the district which he supervises. It seems to be impossible to establish a uniform procedure throughout Australia and it would probably take years to educate country districts up to the wisdom of such a policy. It would seem advisable, therefore, that the salaries of such district health officer should be paid direct by the State, as such officers would be appointed by the State health authorities and not by local bodies. The Commonwealth might pay the moneys now spent on venereal subsidy, medical fees for invalid pension work and so on to the State as a subsidy towards the salary of the district health officer, in return for work which it might be arranged he should do under these heads.

Chief State Health Officer.—The Chief State Health Officer would have much the same function as at present. To him would go reports from district health officers of diphtheria, typhoid, measles, whooping cough, scarlet fever and similar State notifiable diseases, special reports of insanitary conditions, reports of hospitals *et cetera*. He would be responsible for the control of hospitals, infectious hospitals, food and drugs, milk and the prescribed infectious diseases in his State. The salary of this officer in different States ranges from £300 *per annum* upwards. Steps should be taken to raise his salary more nearly to the level of the Chief Commonwealth Health Officer in the different States. The initial salary should be at least £1,500 a year, with regular increments.

State Health Council.—There should be a State health council composed of, say: (i.) The State Chief Health Officer, (ii.) the Commonwealth Chief Health Officer, (iii.) the State Chief Sanitary Engineer, (iv.) the (?) State Chief Veterinary Officer, (v.) a representative of practising medical profession, (vi.) a representative of local administrative bodies, (vii.) a representative of school or mental hygiene. This council would need to meet regularly. Composed of such different representatives it would be

able to survey and review the health problems of the State or division in which it functions. It would also arrange conferences at least every six months of the various district health officers, at which problems would be discussed. There should also be at least once a year an interstate conference of State and Commonwealth Chief Officers of Health.

Commonwealth Organization.

Quarantine Officer.—The quarantine officer will serve the same functions as the present quarantine officer who is a whole-time officer receiving reports from medical officers on ships, arranging disinfection of vessels, controlling measures for prevention of entry of disease into his area and supervision of health of seamen and performing such other duties as may be prescribed by Quarantine Regulations or by his Chief Commonwealth Health Officer, receiving as a start, a minimum salary of £656 a year, with regular increments.

Medical Officer, Laboratories.—The medical officers, laboratories, have charge of the different Commonwealth laboratories established in different districts and are responsible for the performance of their proper functions. They have the same status and salary as the quarantine officer.

Chief Commonwealth Officer of State or Division.—Above these would be the Chief Commonwealth Health Officer for the State or division. To him go all medical reports of quarantinable diseases; he is responsible for the control in his division of quarantine station and district laboratories. The question whether he would receive reports of more than above disease would depend on the extent to which the Commonwealth shared in the payment of district medical officers. As the Commonwealth pays maternity bonuses, it would seem the natural corollary that reports of maternal mortality and early infantile mortality should be forwarded to him by district health officers, in order that the Commonwealth authorities might initiate any measures necessary in particular districts for the reduction of such mortality. If subsidies for the suppression of venereal diseases and pensions for tuberculosis continue, it would seem also the natural corollary that the reports of such cases should go from the district health officer to the Chief Commonwealth Health Officer in that State so that the present useless or uncontrolled expenditure of such moneys should be prevented. The salary of the whole-time Chief Commonwealth Health Officer at present varies from £960 to £1,150. There should be a minimum initial salary of at least £1,500 a year with yearly increments.

Director-General of Health.

At the head of the health organization is the Director-General of Health for the Commonwealth, whose function would continue as at present. A point on which emphasis should be laid in any properly considered scheme of national health administration, is the salary of this official who is the chief health adviser to the nation. The present salary £1,200, is less than that of the Director-General of Army Medical Service or of any similar official and is totally inadequate to the services performed to the nation, besides being only slightly in advance of the salary of the Chief Commonwealth Health Officer in the larger States. He should receive at least £2,000 to £2,500 a year.

He should have at his headquarters as divisional officers: (i.) Director of Marine Hygiene, (ii.) a Director of Laboratories, (iii.) a Director of Tropical Hygiene, (iv.) a Director of Epidemiology, (v.) a Director of Industrial Hygiene (these are already in existence); (vi.) a Director of Sanitary Engineering, (vii.) a Director of Individual Hygiene, (viii.) a Director of School Hygiene, (ix.) a Director of Animal Hygiene and possibly others, such as dental *et cetera*. These different officers should be available for advice to the different territorial chief health officers or to the district medical officers.

Military and naval hygiene would be left to their respective organizations. Statistics would be left to the Federal Statistician, proper arrangements being made for necessary reports to be forwarded direct to him from district health officers or chief health officer.

Finance.

The chief expenses would come under the following heads: (i.) Salaries for medical staff, (ii.) salaries for inspectors, (iii.) fees for notification. Theoretically these should be paid from local rates as is done at present in large municipalities. At present there would probably be difficulty in country districts in getting agreements to such expenditure. The following are possible plans to meet this difficulty: (i.) Compulsory rating of country districts served as is done at present in New Zealand and South Australia for hospitals serving country districts; (ii.) if this is not practicable it is probable that local rates would have to meet expenses of notification fees and inspectors and that salaries of whole-time medical officers must be paid by State or Commonwealth or both combined, as suggested above. This would introduce a different system from that existing in municipalities, but it seems impossible under present circumstances to have a uniform system throughout Australia. If the control of different diseases were allocated to Commonwealth and State, as has been outlined, it is possible that arrangements might be made by which each of these authorities should contribute to the salary of country medical officers.

The solution of these financial problems, however, is not much a matter for this Sub-Committee, whose duty it is to suggest means by which the medical profession can work together in prevention.

General.

One further matter should be added. Besides the regular conference within a State of district health officers and the annual conferences of Chief States and Chief Commonwealth Health Officers, steps should be taken to arrange definite and regular conferences between the Federal Committee as representing the medical profession of the Commonwealth and the Director-General of Health as representing the Commonwealth Health Department. The value of the interchange of opinion gained at such informal conferences as have hitherto been held, emphasizes the need for some such procedure and for any health scheme to be progressive there needs to be machinery by which the views of the practising profession can be regularly put before the chief departmental administrator of health in the Commonwealth.

NOMINATIONS AND ELECTIONS.

THE undermentioned have been elected members of the New South Wales Branch of the British Medical Association:

- ABRAMOVITCH, SUZANE, M.B., Ch.M., 1923 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.
- BRADDON, PAUL DUDLEY, M.B., Ch.M., 1923 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.
- CALLEN, AUSTIN ARTHUR, M.B., Ch.M., 1922 (Univ. Sydney), Nimbin.
- CHALMERS, ALEXANDER WILLIAM, M.B., 1922 (Univ. Sydney), Goondiwindi, Queensland.
- CHARLTON, NOEL BENSON, M.B., Ch.M., 1918 (Univ. Sydney), Rushall, Pymble.
- DUN, CHARLES WILLIAM SUTHERLAND, M.B., Ch.M., 1923 (Univ. Sydney), Roseville.
- HONNER, RICHARD ST. JOHN, M.B., Ch.M., 1922 (Univ. Sydney), Royal Alexandra Hospital for Children, Camperdown.
- HOWELL, KENNETH JAMES, M.B., Ch.M., 1922 (Univ. Sydney), Royal Hospital for Women, Paddington.
- LEWIS, BLAKE HAMMOND, M.B., Ch.M., 1923 (Univ. Sydney), Royal North Shore Hospital of Sydney, St. Leonards.
- MATER, OTTO WALDEMAR, M.B., Ch.M., 1923 (Univ. Sydney), Gilbert Street, Manly.
- MCCREDIE, HAROLD ANDREW, M.B., Ch.M., 1922 (Univ. Sydney), The Point Road, Woolwich.
- WEST, HENRY JESSE, M.B., Ch.M., 1922 (Univ. Sydney), Sailor Bay Road, Northbridge.

Correspondence.

DEATHS UNDER ANÆSTHESIA.

SIR: I agree with Dr. Gilbert Brown's advice (THE MEDICAL JOURNAL OF AUSTRALIA, March 8, 1924) when applied to the general anæsthetist, yet there is no more convenient or safer procedure in the practice of medicine than chloroform anæsthesia in labour for any purpose except perhaps a stitch when ethyl chloride has some advantages. Ether is more likely to produce vomiting, to excite the patient and to "dope" the attendants as well as the baby. The patient is harder to rouse and when pains cease, there is often a sudden and sometimes alarming deepening of narcosis.

Chloroform has none of these disadvantages, while in addition the danger period is over before the physician leaves the case.

Shock ether cannot be compared to chloroform for speed. With open ether in an emergency the patient, owing to the length of time necessary, might easily lose an otherwise good chance of life.

Yours, etc.,

J. F. MERRILLES.

Roma, Queensland,
March 10, 1924.

Obituary.

ALBERT WILLIAM ESLER.

It is with regret that we announce the death of Dr. Alfred William Esler which occurred at his residence, Douglas Parade, Williamstown, Victoria, on March 8, 1924.

Books Received.

WHITAKER'S ALMANACK, 1924. London: J. Whitaker & Sons, Limited; Sydney: Angus & Robertson, Limited; Crown 8vo., pp. 1078.

Medical Appointments.

DR. A. WALLACE WEIHER (B.M.A.) has resigned his appointment as Honorary Ophthalmic Surgeon to the State Hospital, Lidcombe.

DR. R. C. MERRYWEATHER (B.M.A.) has been appointed as an Examiner to the Midwives Registration Board, Western Australia.

DR. EDWIN CLAUDE CHISHOLM (B.M.A.) has been appointed Government Medical Officer at Comboyne, New South Wales.

DR. ERIC H. GANDEVIA (B.M.A.) has been appointed Certifying Medical Practitioner at Alexandra, Victoria, under provisions of the *Workers' Compensation Act*.

DR. EDGAR ALEXANDER NORTH (B.M.A.) has been appointed Junior Medical Officer on probation to the Lunacy Department, Victoria.

Medical Appointments Vacant, etc..

FOR announcements of medical appointments vacant, assistants, *locum tenentes* sought, etc., see "Advertiser," page xviii.

ALFRED HOSPITAL, MELBOURNE: Medical Vacancies.

AUSTIN HOSPITAL, HEIDELBERG, VICTORIA: Junior Resident Medical Officer.

DEPARTMENT OF PUBLIC HEALTH, SYDNEY: Honorary Medical Officers for Baby Clinics.

Medical Appointments: Important Notice.

MEDICAL practitioners are requested not to apply for any appointment referred to in the following table, without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, 429, Strand, London, W.C..

BRANCH.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 30-34, Elizabeth Street, Sydney	Australian Natives' Association Ashfield and District Friendly Societies' Dispensary Balmain United Friendly Society's Dispensary Friendly Society Lodges at Casino Leichhardt and Petersham Dispensary Manchester Unity Oddfellows' Medical Institute, Elizabeth Street, Sydney Marrickville United Friendly Societies' Dispensary North Sydney United Friendly Societies People's Prudential Benefit Society Phoenix Mutual Provident Society
VICTORIA: Honorary Secretary, Medical Society Hall, East Melbourne	All Institutes or Medical Dispensaries Australian Prudential Association Proprietary, Limited Mutual National Provident Club National Provident Association
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane	Brisbane United Friendly Society Institute Stannary Hills Hospital
SOUTH AUSTRALIA: Honorary Secretary, 12, North Terrace, Adelaide	Contract Practice Appointments at Renmark Contract Practice Appointments in South Australia
WESTERN AUSTRALIA: Honorary Secretary, Saint George's Terrace, Perth	All Contract Practice Appointments in Western Australia
NEW ZEALAND (WELLINGTON DIVISION): Honorary Secretary, Wellington	Friendly Society Lodges, Wellington, New Zealand

Diary for the Month.

MAR. 25.—New South Wales Branch, B.M.A.: Council (Quarterly).
MAR. 27.—New South Wales Branch, B.M.A.: Annual Meeting.
MAR. 28.—Queensland Branch, B.M.A.: Council.
APR. 2.—Victorian Branch, B.M.A.: Branch.
APR. 4.—Queensland Branch, B.M.A.: Branch.
APR. 9.—Tasmanian Branch, B.M.A.: Branch.
APR. 9.—Melbourne Paediatric Society.
APR. 10.—Brisbane Hospital for Sick Children: Clinical Meeting.
APR. 11.—Queensland Branch, B.M.A.: Council.
APR. 11.—South Australian Branch, B.M.A.: Council.
APR. 16.—Victorian Branch, B.M.A.: Council.
APR. 16.—Western Australian Branch, B.M.A.: Branch.
APR. 24.—South Australian Branch, B.M.A.: Branch.
APR. 25.—Queensland Branch, B.M.A.: Council.

Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to "The Editor," THE MEDICAL JOURNAL OF AUSTRALIA, B.M.A. Building, 30-34, Elizabeth Street, Sydney. (Telephone: B. 4635.)

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